SUSTAINABILITY THROUGH INFORMED CHOICE: RISKS AND OPPORTUNITIES

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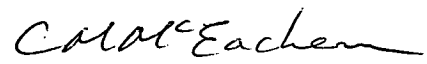
DECLARATION

This thesis contains no material which has been accepted for the award of any other higher degree or graduate diploma in any tertiary institution. To the best of the author's knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text.



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ABSTRACT

The thesis examines the capacity of current demand side policies to change unsustainable consumption patterns, with a special focus on the market-based tools used to develop 'informed choice' by consumers. It is argued that the trend to increased private consumption in industrialised countries is undermining eco-efficiency gains on the supply side. A widening gap between consumer attitudes and actions has led to weaker demand for environmentally responsible products.

It is argued that mainstream consumers are reluctant to change behaviour due to complex internal and external inhibitors. The ability to make informed choices is particularly restricted by poor access to, understanding of and utilisation of environmental product information. Both the barriers and success factors in transforming the market towards sustainable consumption are clarified by analysing trends in Norway, with particular emphasis on 'clean, green food'. The roles of actors in the flow of environmental information along the product chain are analysed to test the assumptions behind 'informed choice'.

Evidence from the Norwegian situation confirms that current marketing and eco-labelling are failing to overcome two crucial barriers needed to change the market: internalisation of costs in prices and internalisation of responsibility by all actors, especially end consumers. The solution is sharper, knowledge-based tools that support 'seamless learning' along the product chain. Both government and business need to invest in conditions that build the competency of mainstream consumers.

The lessons learned from Norway suggest contradictions and paradoxes in pursuing 'informed choice'. The thesis concludes that without adequate monitoring and balanced investment, 'informed choice' is likely to fail and thus jeopardise the demand side of sustainability.

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Tusen takk, alle!

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ACRONYMS

A$	Australian dollar
CER	Corporate Environmental Reporting
CI	Consumers International
CSD	Commission on Sustainable Development
CSR	Corporate Social Responsibility
DFE	Design For Environment
DSM	Demand Side Management
EC	European Commission
EMS	Environmental Management Systems
EU	European Union
FBSD	Foundation for Business and Sustainable Development
GE	Genetically Engineered
GMO	Genetically Modified Organism
GNP	Gross national Product
IP	Integrated Production
LCA	Life Cycle Analysis (or Assessment)
NGO	Non Government Organisation
OECD	Organisation for Economic Co-operation and Development
SUM	Centre for Development and Environment, University of Oslo
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNWCED	United Nations World Commission on Sustainable Development
WBCSD	World Business Council for Sustainable Development
WRI	World Resources Institute

CHAPTER 1: INTRODUCTION

1.1 The problem: background and argument

1.1.1 The sustainable development challenge

The context of this thesis is the need for government and business to set in place long-term sustainable production and consumption patterns. It is becoming increasingly clear that the immediate challenge of the twenty-first century will be to change unsustainable consumption patterns in the world's most industrialised countries. Scientific evidence of continuing global deterioration of the natural capital base makes accelerated change an imperative (UNDP, 1998; OECD, 1998; Worldwatch Institute, 1999). This is critical for both industrialised countries, due to their already high levels of consumption per capita, and heavily populated, developing countries, which are adopting similar patterns. It is taken as a given in this thesis that the rate of consumption of natural resources world-wide is not sustainable, especially with regard to basic renewables such as freshwater, soil and biological resources.

The definition of sustainable development used here is based upon that originally formed by the United Nations World Commission on Environment and Development (UNWCED) in its 1987 report, *Our Common Future*, widely referred to as the Brundtland Report:

> Sustainable development is...development that meets the needs of present generations without compromising the ability of future generations to meet their own needs.... In the final analysis, however, sustainable development is no final state of harmony, but rather a process of change in which the utilisation of resources, management of investments, the direction of technological developments, and institutional changes are brought in line with future as well as present needs (UNWCED, 1987, pp.5-10).

Sustainable consumption is widely recognised by policy makers as the other side of both the 'population coin' and the 'production coin'. The concept is strongly linked to human needs and the issues of equity and poverty inherent in sustainable development. In the decade since the 1992 UNWCED conference in Rio de Janeiro [hereafter referred to as the Rio Earth Summit], many actors in both industrialised and developing countries have begun implementing policies to replace materially intensive production with eco-efficient products and services. However, how critical individual citizens, as consumers, are in this change process also requires addressing. Substituted goods and services change patterns through

supply but the volume created by demand affects the levels of consumption (MoE-Norway, 1995).

There is a general belief that market-driven mechanisms will successfully change unsustainable consumption patterns and levels. A widespread policy view is that by supplying environmentally improved products, the necessary consumer demand will follow. This thesis investigates whether this approach is succeeding and identifies risks, opportunities and likely scenarios emergent from current trends. While the focus is on sustainable consumption in industrialised countries, there is clear relevance for developing countries. The identification of market-based tools capable of accelerating change to more sustainable production and consumption patterns in industrialised countries could support similar processes in developing countries. Environmental pressures are increasing as developing countries adopt the consumption models, marketing strategies and lifestyle expectations of the more affluent. Not only is production becoming more globalised, but so too is consumption.

The thesis examines the current effectiveness of demand side policies in changing unsustainable consumption patterns, with a focus on the market-based tools used to develop 'informed choice' in consumers. The barriers and success factors in moving the market towards environmentally responsible products are clarified by analysing what is argued to be the 'hard edge' examples of consumption trends in Norway, in the 'clean, green food' sector in particular.

1.1.2 The conceptual framework for policy

Consumption issues have been generally overlooked in sustainability policies and there is a need to explore complexities that do not usually occur in supply side studies. In considering how important it is for citizens to understand the need for sustainability, the thesis examines the effectiveness of those instruments being relied upon to deliver broad support for policies. The most important of these are within the general category of 'social instruments' for information delivery, including the consumer-oriented tools of marketing and product labelling. These are the prime means of generating 'informed choice' among consumers. While 'eco-labelling' has been deployed mostly by government and 'green marketing' by business, both sectors are using both tools. Other players such as environmental and consumer NGOs are also promoting these tools for communication and education.

It is the increasing policy reliance on market-driven instruments to change unsustainable consumption patterns in industrialised countries that is investigated in this thesis. In the context of sustainability policies, the purpose of these tools is to develop a critical mass of consumer support that will accelerate the demand for innovative and dematerialised products and services. The supply of improved 'environmental' products results from operationalising sustainability through new 'sub-concepts' such as eco-efficiency, cleaner production, Design for Environment, and emerging concepts such as Factor 10, Demand Side Management (service-focussed policy) and environmental space (eco-sufficiency).

These concepts reflect current policy attention upon new, environmentally-sound product development. However, the technological advances made by industry could be at risk without a commensurate increase in sustainability awareness and consequent action by mainstream consumers. A long-term, demand-side view of sustainability would eventually place more responsibility on individual citizens to make an informed choice. The question becomes, then, how prepared are consumers to internalise such responsibility and either voluntarily change their behaviour or accept regulations that would constrain future choices and lifestyle? This is a question with implications for both industrialised and developing countries.

1.1.3 The international context

This thesis is intended to contribute to international evaluation of the progress of sustainability, especially on the demand side. A cross-national study has therefore been undertaken. Baseline data is provided that could add to a more global 'situation report' of progress and trends in a ten-year review since the Rio Earth Summit. The global market place is as much a part of reality as are shared environmental challenges and all countries, especially industrialised ones such as Australia, are influenced by global trends. By bringing dynamic global issues into focus through a 'reality check' of one key policy mechanism – informed consumer choice – an indication of the performance of common information tools can be made.

To gain maximum global perspective, a location distant from the conventional, English-speaking research destinations of the United Kingdom and North America, a smaller country to the side of the larger global actors, Norway, was selected in order to obtain an inter-cultural perspective and new insights into the progress of sustainability.

Similarly, in seeking new knowledge about real world challenges, it became necessary to identify an emerging critical area rather than revisit examples already documented. Thus the thesis not only analyses the situation in a country recognised as a global leader in sustainability policies – Norway - but also focuses on the little investigated field of food consumption, especially of ecologically sound products.

It is argued that Norway is comparable to Australia on several significant grounds and that food demand is a universal indicator of progress towards such fundamental objectives of sustainability as natural resources management and the alleviation of poverty. By combining Norway and food, the thesis provides an examination of policy initiatives, trends, challenges and lessons that is relevant to Australia, other Organisation for Economic Cooperation and Development (OECD) countries, and, in turn, developing countries.

The Norwegian study of food demand is used to provide a clearer understanding of the complex relationships between factors affecting consumer decision-making processes. In particular the roles of knowledge and socio-cultural context are explored. The thesis integrates interdisciplinary knowledge, sources and experiences to make sense of complexities. It seeks a new synthesis of factors that determine the effectiveness of demand strategies for 'informed choice'. It allows policy makers to identify relationships that need to be monitored.

Recommendations relate to a number of topics, including performance indicators, strategy guidelines, partnerships, incentives, rights, roles and responsibilities. They will be presented in a way to improve the implementation of new strategies for product policies generally. Therefore, though food is used as the example, the findings will be of more general and wider application in helping government, business and consumer organisations determine future action.

1.1.4 The thesis problem defined

Sustainability is a problem that involves decision-making about the interaction between the ecological system and the human systems of economics and society-culture. Some factors in this interaction are examined; specifically, it is argued that industrialised countries should develop a new generation of marketing and labelling strategies to reverse global patterns of unsustainable consumption patterns. The thesis examines whether the development of innovative information strategies to build demand for sustainable products is being inhibited by a relatively low knowledge base in consumers. It is contended that improved consumer

understanding of conceptual and instrumental knowledge is essential. Successful implementation of key sustainability concepts such as dematerialisation and eco-efficiency are dependent upon the successful marketing of the benefits derived from innovative products and services. This is essentially a matter of knowledge and building the competency of mainstream consumers. The study will determine whether recognition of the importance of knowledge and learning within businesses and governments is being transferred effectively to consumers and citizens.

Is a more integrated approach needed to ensure that the so called 'knowledge age' of 'intelligent solutions' applies to both the supply and demand side of the sustainability equation? Compared to increasing investment by government and business in training for eco-efficiency and cleaner production, there appears to be only incidental consumer or citizen education. The problem explored is whether mainstream consumers are learning to change their preferences towards environmentally-improved products and services.

Many subsidiary research issues need to be addressed. Changing patterns of production and consumption is a new and unprecedented challenge for policy makers. After a decade of designing and implementing sustainability policies, there is widespread realisation that the process is a learning one for all actors. This realisation raises the question of whether the need to set learning outcomes to improve the knowledge base of consumers is sufficiently recognised and operationalised.

1.2 Aims, objectives and desired outcomes

An intent of the thesis is to make an original contribution to policies for changing unsustainable consumption patterns. It seeks, particularly, to shed light upon the constraints on developing the demand side of policies. The research will facilitate information exchange to help resolve the contentious issue of how to change consumption patterns. The thesis will, therefore, provide new knowledge for strategic policy use by governments and business to more effectively harness the potential of the global market place to achieve sustainability. Overall the thesis will give the reader a clearer understanding of:

- how market demand for sustainable products is being shaped,
- how informed choice is being created,
- what factors affect consumer decision-making,

- where and how consumer demand can be effectively strengthened;

and an appreciation of existing information tools and desired future directions in terms of:

- improved market forces for long-term demand side management,
- improved social and consumer focussed tools, and
- provision of an independent knowledge base to support the decision making of all actors.

The objective of the thesis is thus to clarify the risks and opportunities involved in taking the market-driven approach to changing consumption patterns. It examines how information policy instruments are expected to lead market-driven changes. In particular it determines the extent to which they can deliver an increase in 'informed choice' to favour environmentally improved products and services. The study will examine evidence regarding how much information is needed by consumers and how effective such information is in actually changing consumption. Such a review of information instruments will reflect on the status of sustainability policies themselves. It will also act as an audit of current research into the performance of green marketing and eco-labelling. As it will focus on the factors inhibiting change to more sustainable consumer behaviour patterns in industrialised countries, it will also assess the importance of knowledge as a factor in consumer change and its relationship to conventional theories and the operations of marketing and eco-labelling.

From these objectives, the following questions are asked and the following outcomes sought:

- On current results and trends, will 'informed choice' create sufficient demand to transform the market towards sustainability? *Outcome: An understanding of the variables involved in consumer decision-making and in investment in consumer learning and in market-based solutions generally.*

- What are the barriers constraining the performance of information tools and how could they be overcome? *Outcome: An understanding of state-of-the-art European eco-labelling and marketing, in the context of their role in conveying knowledge and meeting the information needs of all actors, including consumers.*

- How vital is the role of knowledge in consumer decision making and the overall effectiveness of marketing and eco-labelling? *Outcome: An understanding of consumer competency as a variable in changing consumption patterns; in particular, the relationship between knowledge, consumer decisions and other variables.*

- Are current information tools able to continuously improve the competency of consumers to make environmentally responsible decisions? *Outcome: An understanding of the interdependencies between the concepts and principles underpinning the sustainability policies of government and business, including a better idea of how these concepts could be translated into instrumental knowledge through marketing and labelling tools.*

- How can the competency of consumers to make informed choice be further developed and what conditions would support such a strategy? *Outcome: Guidelines for strengthening the information tools of marketing and labelling, in order to assist them to meet the objectives of sustainability.*

- How crucial is 'informed choice' by individual consumers in achieving sustainability and is it a realistic and feasible strategy to pursue? *Outcome: An understanding of the constraints facing the implementation of sustainable consumption policies through the use of information instruments.*

- Why has consumer choice of food products become a critical test for sustainability policies? *Outcome: An understanding of the research issues facing food consumption patterns in industrialised countries, including a benchmark of the perceptions, needs and roles of a broad range of global actors in the food sector, as well as those at the micro level (including retailers, suppliers and regional marketing boards).*

- What international lessons can be learned and applied to improve Australian and developing countries' policies for the demand side? *Outcome: An understanding of the risks and opportunities involved in marketing sustainable products and services.*

In summary, the thesis analyses the current effectiveness of building demand side market-based sustainability through 'informed choice' by consumers; to give an insight into how positive the results of this approach currently are, and to explore how, in practice, demand side tools are building consumer competency to make informed choices.

1.3 Methodology

The following theoretical domains have informed the research:

- Sustainable development theory: particularly its premise that economic growth is a prerequisite for environmental and social concern. However, criticism that the concept itself is too vague for implementation is acknowledged (Gibbs, 1994, p.183).

- Ecological economics and industrial ecology: The macro approach to sustainability involves transforming the economic system to incorporate ecosystem limits. An emphasis on ecological efficiency and maintaining ecosystem integrity in human systems is central to both theories (Parto, 1999, p.4). Such perspectives include Herman Daly's (steady state) economics of biophysical equilibrium between inputs, throughputs and outputs (Daly and Townsend, 1993). Other relevant concepts include dematerialisation, natural capital and perspectives on business strategies (Weizsacker *et al.*, 1997; Welford, 1995), closed–loop manufacturing, and the emergence of the knowledge economy in which new value is accorded individual, organisational and societal knowledge.

- Marketing and eco-labelling: these tools work to deliver competitive advantage by informed consumer choice. The theoretical implications of determining 'eco-friendly buying' are that they use either 'reasoned action' to explain and predict beliefs, attitudes, intentions and behaviour itself or they use 'moral behaviour' to predict altruistic decisions (Soler, 1994, p.268). 'Green consumer' marketing theories have a strong focus on personal ethics and group identity to motivate change (Moisander, 2000, p.127)

- Consumer buying behaviour: psychological and sociological explanations of this variable. One of the relevant theories is community-based social marketing, which draws upon research in social psychology concerning individual motivation. However, it goes beyond the conventional 'rational-economic' and 'attitude-behaviour' models of the behaviourist theories of demand (McKenzie-Mohr, 1996).

And finally,

- Input from various disciplines as needed to identify and interpret the kind of information required to illuminate the research problem. For example, consumer decision-making

about needs and choices draws upon psychological theories, such as Maslow's hierarchy of needs (Solomon, 1996, p.131). How people respond to and utilise information concerns educational and learning theories. The research is based upon an interdisciplinary exploration of literature covering sustainable production and consumption policies and discussion and research on environmental management, marketing, consumer information, economics and natural resources management.

The thesis is internationally oriented. The possibility of using a comparative methodology was considered and rejected. To some extent, comparative analysis is implicit in the thesis, but as its findings are preliminary in terms of international applicability, they require much more systematic application in the context of Australia and Norway, and between industrialised and developing countries. Instead it was considered preferable to use the research findings as a baseline contribution to follow-up research in what is still a relatively weak field of international collaborative research. Thus, the thesis is an explorative study rather than a comparative analysis.

Such comparative analysis that is deployed is limited to a qualitative, global comparison, although the study also identifies patterns of similarity and difference across a number of players within one case at the micro level, that of Norwegian ecological food products. The data so obtained help explain factors and relationships identified at the macro level. This approach of qualitatively clarifying the similarities within subsets of a case can be used to gain appropriate in-depth knowledge (Ragin, 1994, p.130).

The thesis does not intend to be a case study, although it examines relationships in a similar way to the case approach (Yin, 1994). It shows how general explanatory principles identified at the macro level are exemplified in the micro situation. The 'case' of Norway and ecological food allows a number of propositions about the effectiveness of information tools to be made.

This study is, by necessity, interdisciplinary. It deals with cause-effect relationships at different levels: between consumers, producers and the environment; between consumer needs and wants; between attitudes, actions and knowledge; between product supply and demand – and the explication of such complex linkages requires a transdiscipinary perspective. Knowledge from economics, ecology and social science, including that from marketing, learning theory, behavioural sciences, industrial product development, management and policy development have been utilised. For example, in discussing

consumer responses, it is necessary to consider theories of behaviour to explain decision making in the market place.

The study is qualitative, with a focus on 'how' and 'why'. The empirical component of the research is a mix of various sources, including the perspectives gained in interviews with the actors along one product chain. This data is checked against other empirical evidence from surveys and observations, including facts on food production and consumption.

A literature search was undertaken and an overview of the global consumption patterns in industrialised countries was constructed. Discussions were also held at several research meetings in Europe. Preliminary findings were then tested by examining one case of marketing and labelling an innovative product, and the global findings were then verified by both the micro level case of the food sector in Norway and a final recheck against other secondary data. The decision to select the food sector in Norway was made in accordance with the following criteria: in what sector was the most relevant new challenge for environmental product introductions; which organisations connected to this sector had a stated policy to address sustainability; which organisations involved in this particular product chain had vested interests in achieving successful outcomes from innovative product; and, who were the critical individuals in these organisations. Having chosen the ecological food sector in Norway, interviewees were selected from:

- producer and farmer associations;
- government agricultural and environmental agencies;
- industry marketing boards and wholesalers;
- retailers;
- environmental and consumer NGOs; and
- consumer and agriculture-food research organisations.

For each organisation interviews were undertaken with an official involved in either marketing and /or environmental strategy/policy. It was decided to keep the identity of these individuals coded in the thesis, primarily due to a sizeable proportion of the evidence being based on their own perspectives rather than official and cleared positions of the organisation for which they work.

For this survey, objectives, selection criteria/sample design, data collection verification methods, design of questionnaires and a pilot test were made in mid 1997. Prior to undertaking interviews, a protocol was designed (keeping in mind the cultural customs of

Norwegians) to guide the process. A qualitative survey, designed to be a semi-structured questionnaire for use in face-to -face interviews only, was developed. All interviews were taped and transcribed.

Through 1998 to 2001, a process to verify the accuracy of analysis was undertaken to ensure that the wider context of cultural factors affecting the situation was fully understood. An extended range of secondary sources was also used to help explain the micro-level component of the study. Insights gained from participating in relevant activities within a specific culture, including food consumption itself, adds to the validity of analysis (Worsley, 1970, p.112).

Sources used include policy documents of the United Nations Commission on Sustainable Development (CSD), the OECD and the World Business Council for Sustainable Development (WBCSD). The literature search also disclosed the cutting edge of research in the Nordic region and other European countries. (This step helped in the selection of the micro case of ecological food products in Norway and the identification of relevant actors in one particular product chain: dairy products.) Particular attention was given to consumer behaviour theories underpinning marketing and eco-labelling tools, as the positions taken on these reflect those on other issues such as regulatory instruments and consumer rights. The literature helped to identify the nature of the policy issues and drivers affecting sustainable consumption patterns and trends. It also identified the main policy mechanism to consider in the thesis: informed consumer choice. Data for the macro-level conclusions were mainly taken from secondary sources but also the Internet, professional network contacts (especially in Norway), newspaper readings and general statistics.

Statistical data was obtained from government agencies and public opinion polling organisations. Qualitative findings have also been used from historical, policy and official documents; surveys; from media reports; and insights from direct observations at European conferences and workshops, including: Greening of Industry (Heidelberg, Germany) and Without Borders (Wuppertal, Germany) both in 1996; and, AIESEC Global (Basel, Switzerland), Nordic Business and Environmental Management (Helsinki, Finland), Environment Northern Seas (Stavanger, Norway) and Business Strategy and Environment (Leeds, England) all in 1997. Access to data was also gained during participation in a Norwegian based international educational project: the 'Eco Literacy Project' of the Foundation for Business and Sustainable Development.

1.4 Scope and limitations

In overviewing the status of research and strategies concerning sustainable consumption, the thesis does not analyse or compare theories such as marketing, consumer behaviour or economic pricing techniques. Nor does it identify precise methodologies for consumer education or applied measuring instruments appropriate to improved marketing or labelling schemes. Nor does it identify a core of conceptual knowledge for marketing and eco-labelling. Discussion about institutional arrangements and the influence of related factors such as historical and cultural changes on policy development is also limited. Although it ranges broadly, the research is not exhaustive. It is recognised that more information is required for the implementation of its recommendations. Only a solution framework is presented.

Several issues that are identified in the literature review phase are currently under-researched. Though this constitutes a limitation on its potential achievement, the thesis provides knowledge that will help sharpen the relevance of the small amount of secondary data that currently exists. Little exists at present that might help guide policy decisions on the role of marketing in sustainable production and consumption.

On grounds of keeping the study manageable, much of the conceptual framework deployed in sustainable production and consumption - Demand Side Management, for example - is not critically reviewed, at least in any detail. On the other hand, the assumptions behind the expected capacity of green marketing and eco-labelling to improve the competencies of consumers to make informed choices, are critically challenged.

Identification of the most critical relationships that industry will have to address, and of what variables should be monitored, has in itself been a challenge. The following problems have been identified:

- There is little existing research into policies, processes and practices concerning demand side issues, particularly comparative international studies.
- There is a lack of data on factors constraining the development of marketing and advertising as mechanisms to reinforce informal learning.
- There is a general lack of baseline data and case studies of best practices in meeting the marketing challenges of sustainability.

- There is a general lack of data on the causal factors of slow consumer support for increased prices for innovative, longer-life products and services, especially those internalising more of the costs in ecologically sound production processes.
- There is a lack of research specifically addressing the global need to link consumer decision-making on food purchases to natural resources management issues.

The focus is on identifying the cultural and other variables that provide an understanding of the characteristics of the institutional structures, approaches and results to date in Norway (and also in neighbouring Nordic countries) with a view to applying the findings more widely, especially to Australian circumstances. For example, the strong principle of participation in the policy models of Nordic countries explains, in part, why some of the obstacles to recognising problems and longer-term policy setting are less constrained than in Australia and North America. While it is not the objective of this study to make a detailed comparison of Norway with Australia, it does allow for closer examination of the barriers that need to be addressed in designing sustainability policies, and the author uses his understanding of the Australian situation to highlight the relevance of the Norwegian findings to this country. Some basic comparative data is provided between Norway and Australia. Similarly, the thesis does not compare institutions or types of products. Some generalisations are made, however, that can be applied to other products and to countries such as Australia. The lessons concerning trends in consumer behaviour and the marketing of ecological food are particularly transferable to Australia. For example, the product chain approach could be readily extended into Australian research using the baseline from the Norwegian case.

As not all answers can be provided in a single piece of research, one outcome will be the identification of useful foci for future research. This involves identification of issues requiring further study and opportunities for potential international collaboration, especially between Norway, Australia and Asian countries. Some questions are provided to assist the development of research momentum in this field.

Certain difficulties were encountered in the course of the study. The cultural context of conducting field research in Norway over a two-year period placed constraints on available time. Considerable time was needed to minimise the risks of misinterpreting concepts and interviewee and other statements. But the research was enhanced because of this effort and it now provides knowledge that is not readily obtainable, particularly for the Australian audience for which it is intended.

There were, however, some problems encountered that impinge upon the applicability of the findings. Due to the complex nature of the topics being investigated, considerably more time was devoted to data collection than anticipated. Little research on the topics existed in Australia and as a result a reference list had to be created from the ground up - a step assisted by the decision to attend international conferences. With many gaps found to exist in demand side research, some important questions cannot yet be answered. This created a problem in itself; how to limit the study to gain insight into the most relevant and critical relationships requiring investigation.

1.5 Structure of thesis

Chapter one, the Introduction, explains why the subject has been chosen and establishes parameters, themes and methodology. The body of the thesis consists of six chapters. The first of these, chapter two, provides a description of the conceptual framework used, reviews in detail the drivers of sustainable consumption, and also explains the rationale for market-driven strategies and tools. The definitions of several state-of-the-art concepts are provided and, more importantly, their relationship to sustainability policies is outlined.

Chapter three examines the situation on the demand side and identifies expectation deficits in policies, goals, targets and outcomes of information tools. The situation in Norway is described but placed within the global context, especially the wider Nordic, European and other OECD (including Australia) situation. Problems with changing consumption patterns, especially through the tools of marketing and eco-labelling, are explained.

Chapter four analyses the problems. It examines the factors identified at the macro level in the context of marketing and eco-labelling within the Nordic food chains. Particular attention is given to analysing the relationships between knowledge, consumer competency and internal and external barriers to informed decisions in the market place.

In chapter five, best practice in overcoming the obstacles to effective functioning of marketing and labelling as learning tools for consumer change is identified. A set of conditions that would help improve the overall effectiveness of the information tools is outlined. Also presented are guidelines for a new generation of marketing and labelling strategies to accelerate consumer education and, consequently, market demand.

In chapter six, the policy implications of the Norwegian study are discussed. The risks and opportunities involved in building consumer understanding and preference for environmentally-responsible products and services are explored. Recommendations for action by government and business are made, particularly to improve the role of major actors in developing consumer competency and the flow of knowledge along the product chain. A brief conclusion completes the thesis.

CHAPTER 2: THE ROLE OF DEMAND IN SUSTAINABILITY

2.1 Introduction

The chapter outlines the main pressures upon the supply and demand sides of sustainability, though particularly upon the latter. It investigates the critical mechanism of consumer 'informed choice' within sustainability policy. Apart from identifying the pressures behind unsustainable consumption patterns, the relationship between key sustainability concepts, various policy responses and the instruments currently being applied, is explicated. Consideration is given to the role of social policy instruments that are intended to influence consumption. The process of developing, communicating and using information as a social instrument for change is briefly examined. The expected outcomes of sustainability policies are identified and analysed, particularly to the extent that their objectives identify learning outcomes for the general public. As explained in chapter one, the overall field of information, learning and human behaviour is very complex, so the focus is only on two key information tools: marketing and labelling.

While the chapter focuses on the macro-level, it also explains the rationale for the micro-level aspects of this paper; food products and Norwegian experiences with consumption patterns. A conceptual framework is established that will be used to analyse the current effectiveness of demand side policy tools in chapter three.

The main questions that this chapter will answer are:

- what and how are environmental pressures linked to consumption issues?
- what are the policy responses of the main players to unsustainable consumption?
- what concepts and theories are guiding these policy objectives and strategies?
- what policy mechanisms to deliver sustainability goals are in favour?
- what are the functions of information-oriented policy tools and their expected outcomes?
- why should food be recognised as a critical challenge for sustainability policies?

and,

- why should Norway be considered as a relevant indicator of progress towards sustainable consumption?

2.2 The context of declining sustainability

In an era of accelerating globalisation, the state of the sustainability challenge is increasingly complex. Significant policy changes in the three systems affecting human life - ecological,

economic and social - are occurring with each system under increasing stress. There is also evidence that the continuing deterioration in the quality and quantity of natural resources underpinning basic human needs is largely a consequence of pressures stemming from human population levels and concentrations, consumption levels and technology applications (Hart, 1997, p.70).

An evaluation by the Commission on Sustainable Development (CSD) in 1997 indicated that 1.5 billion people had become poorer, not richer, in the five years since the Earth Summit in Rio (MoHSPE-Netherlands, 1997a, p.4). At the same time, two of the basic needs for direct human survival and food production, freshwater and fertile soil, are in decline globally. Furthermore, it is predicted that wastes in developing countries will double in the decade before 2005 and that most of this waste will enter surface and ground water supplies untreated. By 2025, three billion people could face severe freshwater scarcity. Soil erosion made a further 10 per cent of agricultural land unusable between 1990-96 (Postel, 1996, p.53). Meanwhile, more than a third of fishing grounds are suffering from declining fish stocks (Willums, 1998, p.45).

How to respond to extreme poverty and deteriorating ecological conditions has been on the international policy agenda for nearly half a century now. Awareness began in the late 1960s and entered the policy mainstream with the United Nations Conference on the Human Environment in Stockholm in 1972. It was the integration of socio-economic development with environmental conservation by the UN World Commission on Environment and Development (UNWCED) in 1987 that formalised the concept of sustainability. Both UNWCED and its report *Our Common Future* came to be popularly identified by the name of the Commission's chair, the long-serving Prime Minister of Norway, Gro Harlem Brundtland. It was during the late 1980s and early 1990s, that Norway, under Brundtland, profiled itself as an international leader on sustainability policies.

The Brundtland Report's orientation of sustainable development towards meeting inter and intra generational needs was based on the premise that economic growth is a prerequisite if developing countries are to overcome poverty and subsequently reduce ecological degradation. This has been widely used to argue that the only feasible policy direction is to lift the rest of the world to the normative standards of living currently enjoyed by the industrialised countries. Despite this, however, in the decade since the 1992 Rio Earth Summit, the pressures on sustainability have continued, in some case with little abatement. This is now resulting in policy attention to the patterns of consumption, a challenge that goes directly to the matter of lifestyles, as former President Bush highlighted in 1992 when he said that 'American lifestyles were not negotiable'.

It is in the area of changing citizens' expectations of consumption levels that many obstacles to sustainability policy development and implementation exist. The industrialised countries are discovering that trying to accommodate the expectations of developing countries is one of the most difficult negotiation points in achieving workable international agreements. The climate change field is one obvious example, with perceptions of responsibilities, roles and rights in conflict, distorting dialogue and any sense of 'burden sharing' in reducing the consumption of energy from polluting fossil fuels. Ratifying the Kyoto Protocol on climate change is often debated in the USA, Australia and many industrialised countries as a matter of sovereign control over lifestyle consumption patterns.

Although changing unsustainable consumption patterns may have been regarded in 1992 as a longer-term policy agenda, the twenty-first century has already arrived. The main contributor to environmental pressures is emerging as consumption, an 'integral part of complex social processes behind overall growth' (Ropke, 1999, p.400). According to Ropke, the forces behind the compulsion to consume can be explained as economic, socio-psychological and historical and socio-technological (p. 402). These will all be considered during the thesis.

2.3 Creating demands and wants

To appreciate the relationship between consumption patterns and pressures upon polices, a closer look at human needs is required. An audit of the main concerns and demands of consumers and citizens indicates why sustainable production and consumption reflect the dual tensions of sustainability. While production focuses on supply side, consumption addresses the demand dimension and consumers' choice of products or services to meet their needs. At the individual level the purpose of demand (which is the prime driver of all economic activity) is to fulfil basic needs and improve the quality of the individual's life. Although 'standard of living' is the widely used narrowly quantitative measure of this goal, measuring the 'quality' of anything is harder. Monitoring 'basic needs' is full of paradox for industrialised countries.

Basic human needs remain unmet in developing countries, and they can no longer be taken for granted in industrialised countries where supplies of clean, uncontaminated freshwater, air and soil continue to erode. With widening gaps in wealth within industrialised countries, there is also a degree of commonality with developing countries over food security and quality of health at the individual level. The irony is that policy attention to production can ignore the fundamentals of meeting basic needs and how people choose their priorities.

The World Business Council for Sustainable Development held a series of business dialogue workshops on the theme 'Sustainability through the Market' in non-OECD countries in 1999. These resulted in the following key messages:

> Overall, stakeholders agreed that current consumption patterns, particularly those of higher income groups, were unsustainable... However, as many people in developing and emerging economies are still struggling for basic needs, sustainable consumption is not yet on the 'radar screen'...(meanwhile)...the consumption of the upper class – whose consumption of 'luxury' products has increased considerably – needs to be tempered. Many participants in various countries advocated a more 'simple living'... consumers were seen to have increasing responsibility to influence sustainable consumption. Once basic needs are met and a certain level of economic stability is achieved, it is easier for them to move to responsible purchasing – and to exert pressure on governments to enforce legal compliance among companies (WBCSD, 2000a).

But how are consumers' expressed needs influencing the supply and demand sides of the market? Because the 'whole' is so large and so dependent upon collective behaviour to reverse poverty and ecological degradation, individuals can feel that their own actions have no significant adverse impact or, conversely, no major preventative or remedial benefit. Thus the discussion of limits may not be clearly linked to consumption choices as consumers are removed in time and place from the consequences of their decisions. Any agreement to act still carries considerable uncertainty over who will, and how to, carry the burden of change. One might therefore expect responsibility to be placed upon producers to effect change in the supply system.

According to marketing theories, when consumers are given a choice of similar products, these have to compete on their capacity to satisfy 'wants'. These wants can be far removed from basic physical needs, are often intangible and strongly influenced by perceptions and emotions (Corkingdale *et al.*, 1996, p. 6). The economic theory that people seek to pay the minimum to satisfy needs is confounded by complex, ever-evolving wants. This raises the question of how rational consumers really are in their decision-making. The socio-psychological explanation of consumption drivers points to such motivating factors as insatiable wants and envy, involving social emulation, competitive display and conspicuous consumption (Ropke, 1999, p.406).

Maslow's hierarchy of needs leads marketers to consider that needs once satisfied are no longer motivating forces. The needs follow a systematic order from physiological, safety, belonging, esteem to fulfilment (Kotlar, 1994, p.185; Corkingdale *et al.*, 1996, p.16). Yet

there is continuing debate as to whether marketing reflects consumer concerns at all or whether advertising shapes reality instead. There is concern that advertising reflects only the attitudes, values and behaviours of life-styles that are beneficial to the seller (Enger, 1996, p.6). Others note that the continuous evolution of the market place has seen companies change their original functions as 'demand satisfiers to reflect modern demands for short-lived consumer goods and rapid introduction of new technologies' and the 'power of financial markets has shifted emphasis from serving demand to creating demand' (Ehrenfeld, 1995, p.58). Ehrenfeld suggests that one of the consequences is 'a loss of understanding of the consumer's deep-seated concerns' and today, where basic needs have already been provided, producers use 'powerful ways of shaping preferences'.

Yet fundamentally marketing recognises the obligation to meet consumer needs. Market failure is 'unavoidable' if the product offered does not satisfy needs (Peattie, 1995, p.79). The long practiced management concept of Total Quality Management aims to satisfy customer needs 'by any means' as consumers usually do not care how their needs are met (Weinberg, 1995, p. 30). By contrast, the European industrialist Claude Fussler (1996a) suggests that new marketing for sustainability starts with the producer asking if the product is really necessary (p. 89). He also believes that opportunities for business lie in currently unarticulated needs of consumers, many of which 'will be driven by the imperatives of sustainable development' (p. 87).

And here lies the challenge. In order to achieve sustainable consumption patterns in industrialised countries, there is a need for a complementary strategy to build both demand for innovations (especially dematerialised products) and for adjustments to lifestyle (behaviour to reduce impact on natural resources). Individual choice in the market place affects inputs and outputs, including the use and disposal of products. The sustainability quest challenges the expectations of conventional modern lifestyles and the daily actions of mass consumers. It introduces the notion of inter and intra-generational responsibility ' and limits of 'enough' that go beyond natural limits and 'efficiency' issues to address 'sufficiency' questions.

As marketing continues to expand human wants without apparent limits, a question arises: 'do humans have unlimited needs to satisfy?' It is probable that in the context of a world in which many still struggle to obtain such basics as food, the promotion of 'artificial needs' could have a limited life itself. Meeting the cost of clean and healthy food, water and shelter is becoming increasingly difficult for those in industrialised countries as well. The Brundtland Report saw needs as socially and culturally determined and argued for the promotion of values that encourage consumption patterns to which all can reasonably aspire

(Baker *et al.*, 1997, p.3). The Norwegian philosopher, Arne Naess, argues that people should tell themselves: 'don't live a life you cannot seriously wish that others might also live, if they wish to live that way. At the global level, can we seriously wish people in India and China to live our wasteful Western life?' (1997, p.62).

2.4 Consumption and sustainability: critical policy responses to date

Just prior to the Rio Earth Summit, the Swiss industrialist Stephan Schmidheiny's influential book *Changing Course* drew attention to two principles to guide business towards sustainability. 'We can hope for the best' he wrote, 'but the "precautionary principle" remains the best practice in business as well as in other aspects of life' (1992, p.3). Secondly, he stressed the need to efficiently reflect the costs of ecological degradation: 'market economies must now rise to the challenge and prove that they can adequately reflect environmental truth' (p.15). He quotes the President of the German think tank, the Wuppertal Institute for Climate, Environment and Energy, Ernst von Weizsacker: 'Bureaucratic socialism collapsed because it did not allow prices to tell the economic truth. The market economy may ruin the environment and ultimately itself if prices are not allowed to tell the ecological truth' (in Schmidheiny, 1992, p.15). The extent to which costs are internalised in prices is one measure of the success of sustainability policies to date.

Business generally believes that it has made considerable progress towards implementing the goal of sustainability. Instead of entailing only risks, 'the environment' and 'sustainable development' are increasingly seen as responsibilities and opportunities (Stigson, 1999, p.425). According to Stigson, three phases have occurred since the Rio Earth Summit: end-of-pipe regulation and repair; improving products and processes; and an emerging view that sees competitive advantage in the market by continuously improving environmental performance. The latest response is being driven in part by 'the public using its buying power to encourage business towards fulfilling environmental and social responsibilities' (1999, p.427). On the business agenda, at least in Europe, are new concepts such as Corporate Social Responsibility and Sustainability Through the Market, along with sustainable indicators in national accounts, and new subsidies and taxes favouring eco-efficient use of resources.

It can be shown, however, that the main policy response of most industrialised countries, government, business and NGOs alike, has been on the supply side rather than the demand side of changing unsustainable consumption patterns. Supply and demand sides each have a set of theories explaining (and influencing) their roles and relationships, especially

concerning the expected behaviour of consumers. All theories recognise that demand can influence supply. There is continuing debate as to whether individual choice has an impact compared to decisions of larger units such as companies and governments. To date the view of policy makers appears to be that supply chain management is more effective, and this focus has generated scientific and technological responses such as cleaner production and eco-efficiency, as well as the development of sophisticated management tools including Life Cycle Analysis.

The Rio Earth Summit's main output document - Agenda 21- the action plan signed by 170 countries to implement sustainable development, highlighted the need to address unsustainable consumption patterns. Chapter 4 of Agenda 21 states: 'the major cause of the continued deterioration of the global environment is the unstainable pattern of consumption and production, particularly in the industrialised countries...' (CSD, 1992). The UN document clearly indicates that the goals of both sustainable development and environmental quality are dependent on not only improved efficiencies in production but also upon changes in consumption patterns. However, it is the production-oriented objectives of 'optimisation of resource use and minimisation of wastes' that have received most policy action regarding consumption since the 1992 conference. While considerable policy development has occurred in changing the patterns of resource use in industry (through concepts such as cleaner production and eco-efficiency), the broader challenge of changing consumption patterns appears too often minimally treated in sustainability policies. We will return to this in chapter 3.

Nevertheless, Chapter 4 of Agenda 21 establishes two overriding objectives for policy action, especially by governments. The first is to 'promote patterns of consumption and production that reduce environmental stress and will meet the basic needs of humanity', whilst the second is to 'develop a better understanding of the role of consumption and how to bring about more sustainable consumption patterns.' (CSD, 1992, section 4.7). The need to address these objectives resulted in a series of international conferences from the mid 1990s, nearly all hosted by the centre-left Norwegian government of Prime Minister Brundtland, and involving international government, business and community organizations meeting in Oslo in 1994 and 1995, Massachusetts (USA) in 1994 and Seoul (South Korea) in 1995. While Australia officially participated in 1995, there has been minimal follow-up since. In Norway, by comparison, bipartisan concern for the sustainable consumption agenda continued with the new centre-right government of Prime Minister Kjell Bondevik, which hosted the smaller Kabelvaag conference in 1998.

The conferences' findings have been presented to annual meetings of the CSD in New York. It is interesting to note that despite placing consumption before production in its original official references - thereby implying a priority- most of the CSD's attention has been directed towards production. The economically-oriented OECD and the WBCSD have also consistently placed production before consumption in policy documents. Although not openly stated, the implication is that it is easier and more efficient to change production than the purchasing decisions of millions of individuals. Such a subtle change immediately after the Rio Earth Summit signalled, to the more observant players, the direction in which policy strategies would be implemented. Consequently, although policy responses to sustainable production and consumption have varied between business, governments and NGOs, attention has been mostly on the production or supply side.

Why have the industrialised countries placed policy emphasis on supply rather than demand/consumption? Fussler probably articulates the main argument of global business - that technological innovation is that the only viable pathway for changing consumption patterns. Other solutions are more complex as the demand side challenge involves better identification and satisfaction of consumer needs, more product information, more regulation of product introductions onto the market, and a new range of positive and negative incentives for consumers to buy or use fewer products (Fussler, 1996a, p.81). Fussler's position also reflects the fundamentals of the Brundtland definition when he adds 'sustainability and consumption will be difficult partners. The debate has started in the most advanced policy circles of the northern European countries. It is a difficult debate that must avoid the virtuous calls to curb production. It may affect the poorest first'. However, the main reason given by Norwegian authorities for hosting the series of international policy conferences on consumption was that industrialised countries had a clear responsibility to begin the process of changing their unsustainable consumption patterns.

It is the very matter of lifestyle change implied by sustainable consumption that makes this policy area potentially the most challenging for industrialised societies. Despite this, it has begun to appear on national agendas, with clear statements, for example, from the Dutch government that its environmental goals require fundamental changes in lifestyles (Fussler, 1996a, p.74). In the independent or NGO sector, players such as Consumers International (formerly the International Organisation of Consumers Unions [IOCU]) consider that consumer behaviour is central not only to many environmental problems but also to their solutions (IOCU, 1993, p.15). The organisation believes sustainable consumption highlights what is really at issue - that industrialised lifestyles are at the crossroads and the answers will require a radically different concept of 'consumption' itself (p.16).

The twin goals of sustainability, as defined by Brundtland, pose an extremely difficult challenge for decision-making. The implication is that policies must maintain the lifestyles of a quarter of the world's population (who currently use nearly 85 per cent of the available resources), and simultaneously raise the standards of the remaining majority, especially the one billion currently in severe poverty, whilst maintaining the Earth's biophysical stocks in equilibrium. To achieve such a transition, consumers in industrialised countries would have to 'maintain or improve the quality of their lives, while using fewer resources and creating far less pollution' (IOCU, 1993, p.16). The solutions to this dilemma, warns Consumers International, are not simply technological,but also involve profound changes in social values, perhaps especially in the advanced consumer economies of industrialised countries:

> In a sustainable-consumption economy, waste in any form would be abhorrent; people would be as concerned about justice and the moral rights of others as they were about the their own material well-being; and normal human preoccupation with freedom to enjoy the here-and-now would be tempered with a strong sense of responsibility for the fate of the planet, and of future generations (IOCU, 1993, p.16).

Policies need to communicate an understanding of these economic, social and ecological relationships. Various research bodies involved with sustainability have argued that the emerging policy agenda should encompass issues of efficiency, equity, lifestyles and limits. (Robins and Roberts, 1996, p.18). However, while policies may be evolving to reflect multiple objectives for addressing sustainability, it is still uncertain as to how integrated the instruments and delivery mechanisms are. The three systems - ecological, social and economic - may well, in the minds of many people, have nothing to do with each other.

One issue to resolve is that an official national response can differ from the consumer's point of view (Rensvik, 1996, p.16). As Consumer International points out, all long-term scenarios for sustainable development include the assumption that people in industrialized countries will consume far fewer resources per capita. Citizens, as consumers, will act in accordance with the global context of the needs of other humans. It is also assumed that people will understand the basis of these needs and the connections with their own lifestyle behaviour (IOCU, 1993, p.16). Immediately following the Rio Earth Summit, key global players, such as the OECD and the WBCSD, also began to ask how this transition, especially through the objective of 'persuasion', would happen.

There is a clear responsibility, and a challenge to self-interest, for industrial countries to review their current consumption patterns and lifestyles. Global ecological and social pressures for changing unsustainable aspects of consumption are significant and generally accepted by leading international players in business, government and community

organisations (an example of how critical these pressures are is detailed in the case of food, later in this chapter). Although awareness of the need to tackle consumption has been growing for three decades, the scientific knowledge to fully understand the impacts and implications of consumption choices is still only emerging. While there is now general acceptance, especially in legislation, of the precautionary principle's injunction to act in advance of conclusive scientific evidence, it remains 'unclear what the principle actually entails and how it should be interpreted and implemented' (DEPA, 1998a, p.2). However, the principle is being applied mostly to production aspects of sustainability rather than consumption. As we have seen, the policy premise is that it is more cost and time efficient to change production than change the behaviour of billions of consumers.

Europeans have generally responded more strongly to the Rio Earth Summit's call to address consumption than North Americans or Australians, but even in Europe policy objectives still mostly describe actions from the production perspective, with very few articulated expectations as to exactly what and how consumers will change in industrialised countries over the coming years. Several concepts have emerged to convert the 'umbrella' concept of sustainable development to more precise and measurable 'sub concepts', but most, such as 'eco-efficiency', 'cleaner production' and 'industrial ecology', remain supply side oriented. A few, namely 'ecological footprints', 'ecological rucksack' and 'ecological space' are concepts that could operationalise sustainable consumption policies. It is necessary to understand the linkages between these concepts in order to account for policy direction (McEachern, 1996). The relationship between the emerging concepts of 'dematerialisation' and 'demand side management' is particularly considered here, although the linkages between all the concepts discussed in this section and the more demand oriented ones such as 'environmental space', will also be made.

The concept of 'industrial ecology' is connected to a paradigm change occurring in industrial societies and exists between two other views on how to encourage new thinking. Firstly, there is the dominant resource management and anthropocentric approach to sustainable development, as defined by the Brundtland Report. Secondly, there is the greater paradigm shift of the eco-centric 'deep ecology', as pioneered by the Norwegian philosopher Arne Naess. According to John Ehrenfeld of the Massachusetts Institute of Technology, a product policy strategy based upon deep ecology would result in considerable 'trauma' for all involved. Despite its possible long-term solution to sustainability, with deep ecology there is 'little or no ability to listen to its claims today and act accordingly' (Ehrenfeld, 1995, p. 42).

Ehrenfeld's proposal that industrial ecology offers a realistic guiding framework for the transformation towards sustainability is supported by others involved with environmental

management, such as Marstrander (1996). The concept is appearing in the policies of international organizations such as the WBCSD and the United Nations Environment Program (UNEP), and its attention to 'material (resources) flows' links it closely to another emerging concept based on macro-economic theories: 'dematerialisation'. This concept extends the ideas of economists, such as Herman Daly, who have challenged the failure of conventional economic growth theories to fully account for energy production, depletion of natural resources capital and the degradation of the environment (Daly and Townsend, 1993).

An improved efficiency in resource use by a 'factor 10' was advocated in 1992 by Friederich Schmidt-Bleek, formerly of the Wuppertal Institute for Climate, Environment and Energy (Schmidt-Bleek, 1995). A similar position is taken by Weizsacker, Lovins and Lovins in their 1997 book *Factor Four: Doubling Wealth - Halving Resource Use*, while other researchers are attempting to incorporate 'hidden' material flows into the economy (Bringezu,1997; Adriaanse *et al.*, 1997). One common argument is that policy goals must avoid a 'tail end' response by society. This occurs after the economy has already incurred the costs of unsustainable practices and government policies are shaped to prevent unemployment in commodity-based industries such as agriculture, forestry and mining (Factor 10 Institute, 1997, p.10).

The theory behind Factor 10 and dematerialisation is based on a life cycle view which would see accelerated innovation in services and product design, production, packaging, transportation, use, reuse, recycling and disposal. Considerable commitment by all actors, including consumers, to change both thinking and action would be needed to support such 'eco-intelligent' goods and services. A 'dematerialised economy' would require 'a new culture of learning that derives its concepts from an integrative, synthetic model as opposed to conventional, reductionist approaches' (Factor 10 Club, 1995).

One concept that focuses on extending product life (product durability) to achieve reductions in energy, materials use and pollution is Demand Side Management (DSM). By encouraging a shift from products to services, DSM helps focus business strategies more clearly on the end-purpose of being in business - meeting the needs of consumers. For example, the services consumers need from cars are primarily mobility and access to other people rather than owning a product (Willums, 1998, p.55). But changing economic activity to avoid planned product obsolescence is a massive challenge as the automobile industry continues to encourage frequent consumer 'updating' to models that offer only marginally improved quality and performance. Marketing uses obvious psychological factors to create a sense of 'out-datedness and inferiority'.

Several management concepts also affect sustainability policy development, with implications for both internal and external audiences. Total Quality Management (TQM) programs benchmark standards and encourage continuous improvement with a premise that the customer is 'always right' and quality is defined by what the customer (internal and external) 'wants' (GEMI, 1994, p.2). However, this concept appears limited as consumers are not seen to have concerns beyond '"some simple utility-maximising calculus as the growth in TQM has demonstrated' (Ehrenfeld, 1995, p.58). A modified system of Total Quality Environmental Management (TQEM) has evolved, integrating life cycle analysis and design for environment to improve the management competency of producers and others along the supply chain. In the operational context, Environmental Management Systems (EMS) has become an 'umbrella' concept to advance sustainable, 'integrated product policies', including within agriculture. EMS certification is now worldwide and recognized internationally through ISO 140001 and in regional schemes such as Europe's Environmental Management Audit Scheme (EMAS). Several related management concepts, such as 'Eco Management', have also appeared (Grunert, 1995).

Linked to development of environmental performance indicators is the communication tool, Corporate Environmental Reporting (CER). As with eco-labelling, third party verification audits is seen as crucial for credibility, although a clear definition of what constitutes a CER publication has yet to appear. Importantly, CER is an acknowledgment of the right of consumers to information and is also related to the emerging integration between environmental performance and shareholder value (Willums, 1998, p.153-154).

Most of the concepts to operationalise sustainable development are product oriented with very few yet available to address the demand side. In theory, these supply side concepts will stimulate new consumption choices and patterns. Factor 10 aims to decrease the environmental burden of products but 'to achieve this shift will also require a reduction in total consumer demand and expectations' (Panos, 1997, p.3). The challenge will be how to connect conceptual knowledge (such as life cycle thinking) to instrumental knowledge (such as how to use labelling) for consumers to apply sustainability in their decision making.

This brings us to the focus of the study; the reliance upon market-based instruments, especially information to build demand for innovative products through informed consumer choice.

2.5 Policy instruments being applied to implement sustainability

This section extends the conceptual framework for sustainability by examining the policy instruments being used. As shown, supply-side concepts such as eco-efficiency, cleaner production and industrial ecology have helped steer overall policy development towards changing production rather than consumption. By doing so, business and government suggest that it is more cost-effective to improve the environmental performance of products, services and production processes, rather than to directly change consumer choices. If this suggests that the role of mainstream consumers in the change process could be too overwhelming for policy makers, then it is at odds with the principles of existing policies.

Product policies are increasingly directed at improving the voluntary 'pull' from the market to implement any change to consumption patterns. The 'pull' effect is the growth in demand for green products and services, while 'push' comes from internalisation of costs in prices, taxes and other mechanisms. According to the WBCSD, 'market pull - meeting the demands of the customer- is the single most important agent driving change in business, and one of the major challenges for business is therefore the increasing demand for environmentally-improved products and services' (Falkham, 1996a, p.25).

Free market economics is the key economic theory behind this policy approach. Deregulation, privatisation of state enterprises and the removal of trade barriers, all reflect a strong belief in an individual's right to make, sell and use any product or service. Moves to completely liberalise market conditions have increased since the collapse of state- controlled economies in Soviet countries. The free market's link to the socio-political principles of 'unhindered lifestyles' introduces complex emotional factors into the sustainability debate. Any move to modify the lifestyles of consumers has implications for individual perceptions of roles, rights and responsibilities. Yet, by its very nature, the free market is itself constantly encouraging change in individual lifestyles through the pursuit of new wants. In 1958 the economist John Kenneth Galbraith wrote that the premise of consumer demand theory was that psychologically grounded wants would be unlimited with 'no need to inquire how these wants are formed' (p.124). Interestingly, he was critical of economists with a 'disposition to remark on the legitimacy of the desire for more food' (p.127).

Historically, the most conventional policy instruments for sustainability pursued by governments and NGOs in industrialised countries have been regulatory measures of 'command and control'. Business has generally reacted defensively as it sees such instruments being a costly and ineffective 'compulsory blanket approach', with a bureaucratic tendency to treat every business the same regardless of circumstances. The

emphasis on enforcement and inspection also tends to overshadow incentives for investment by business in technology (Hopfenbeck, 1993, p.12; Pearce, 1994, p.87). In contrast, market-based economic instruments are seen to offer flexibility in determining the most cost-effective methods to environmental targets and goals, thereby providing a continuing incentive to invest in cleaner technologies (Willums, 1998).

The UNEP recommends that governments adopt a mix of regulatory and economic tools to create optimal conditions for 'eliminating' unsustainable under-pricing of water, energy and other natural resources (UNEP and WBCSD, nd, p.15). The 1994 Oslo Ministerial Round Table on Sustainable Consumption reported to the CSD that a policy framework should include environmentally sound pricing and ecological tax reform. Market-based instruments, such as 'eco-duties', tax concessions for eco-friendly products and tradable quotas, would then provide incentives as well as penalising the polluter (MoE-Norway, 1994, p.14). Three main methods to achieve such policy outcomes are:

- pricing reforms to internalise environmental costs and remove subsidies that generate unsustainable consumption.
- "green" public procurement policies extending producer responsibility for the life-cycle environmental impacts of goods and services; and
- eco-labelling programs.

The first method is reported to have general support among business with a consensus over the need for regulatory mechanisms, especially eco-taxes, to reinforce standard market instruments (de Andraca and McCready, 1994). This introduces the pivotal factor in any economic instrument, the pricing mechanism, possibly the market signal with the greatest influence over consumer behaviour and consumption patterns. Investment in eco-efficient technology can be encouraged because internalising costs will lead to environmentally 'unfriendly' products becoming more expensive, resulting in fewer sales (Hopfenbeck, 1993, p.15).

The second and third methods relate to those policy instruments intended to change the behaviour of certain target groups through persuasion rather than through legal or financial means. Legal instruments basically 'force' individuals to change behaviour by establishing regulations and penalties for not complying. The 'transaction' mechanism available to government aims to 'steer' desired consumer choices through the financial system of taxes and subsidies. But only through the 'persuasion' strategy of social instruments do individuals voluntarily change their behaviour. Specifically, these instruments include advertising, education, information campaigns, covenants with industry and also the

hardware to facilitate behaviour changes such as waste collection and recycling (De Leeuw, 1995, p.7).

Most importantly, social instruments seek to have individuals internalise the responsibility for sustainable consumption. For such a process to be successful, three elements need to be provided to individuals through the social instruments: knowledge, opportunities to act (and ways to empower others to do so) and facilities to act (De Leeuw, 1995, p.10). However, the means to achieve this educational objective are generally understated in policy strategies and programs for sustainability. The hedge, 'commercial confidentiality for business', can only partly explain the absence of descriptions of such tools and methods from government documents. For example, the European Union's Fifth Environmental Action program, with its focus on voluntary and market based instruments to 'control' individual impacts on the environment, makes only limited reference to how to implement such outcomes (EC, 1996).

It is the general belief within Nordic countries that the interaction between different policy instruments (such as eco-labelling and consumer information) can contribute to rapid change (MoE - Sweden, 1995). However, information instruments exist in tension with legislation, as many advocates of 'educating the market' believe that individuals and not authorities should make all market decisions. The consumer has a right to make the 'wrong' choice, especially over the quantity of legal products consumed, such as tobacco, because: 'As consumers we are informed, but the choices are ours to take, as are the consequences' (Sto, 1995, p.21). But as the smoking issue shows, differing values lead to differing perceptions of an individual's right to impose a burden of hidden costs upon society. A similar dilemma exists when food consumption choices lead to serious health problems.

During its third session in 1995, the CSD endorsed the findings of the 1994 Oslo conference on sustainable consumption and underlined the need for 'focusing on demand-side issues as a complement to the traditional supply-side approach' (CSD, 1995, p.7) Importantly, the CSD advocated the design and implementation of social instruments to promote the values and practices of sustainability, especially for households in industrialised countries to 'adopt sustainable consumption habits and lifestyles'. Formal and informal education would play a vital role in this process as 'by teaching children the importance of protecting the environment and the planet's ecosystem, they will grow up to become tomorrow's environmentally-conscious managers, workers and environmentally friendly consumers' (CSD, 1995, p.21). Throughout the early1990s, governments, including Australia, have resourced school programs in preference to broader consumer education.

Consumer education involves a significant learning challenge. The record of introducing sustainability concepts on the supply side suggests even slower understanding and acceptance of the principles behind these concepts among mainstream consumers. Social instruments must rely upon voluntary cooperation and cannot comprise an exact prescription of desired behaviour. Individuals are therefore able to behave as they choose, making these social instruments dependent upon such social, cultural and ethical pressures, as peer group influence, to make the desired behaviour 'almost unavoidable' (De Leeuw, 1995, p.8).

2.6 Key tools for generating 'informed choice'

This section provides a description of the two key information tools available for building 'informed choice' among consumers: marketing and labelling.

Marketing is arguably the most crucial available social tool, as it can be both a driving and inhibiting force for sustainability. The basic principles, processes and strategies in modern marketing and its subsidiary tool, advertising, flow from consumer behaviour theories developed in the United States of America over the last five decades. Before the challenge of sustainability emerged, marketing developed in parallel with continuous growth in consumption, even driving it: 'Marketing has contributed to the current environmental crisis, because of its central role as driving force behind the unsustainable growth in consumption (or what could be termed over consumption)' (Peattie, 1995, p.24). Marketing, with its focus on intensive growth, is often blamed for adding to the problem of over-consumption. This includes 'too little regard for the actual needs of the consumer, producing goods which are harmful to health and the environment' and 'demand creation: the promotion of dubious patterns of consumption' (Hopfenbeck, 1993, p.176).

Marketing significantly influences young consumers in the growing mega cities of developing countries. As such, in terms of sustainable consumption outcomes, it is as important as formal education. In industrialised countries there is considerable infrastructure for informal and non-formal learning through the media and marketing. If marketing, advertising and eco-labelling forgo a positive role, the overall potential of this infrastructure to build informed decision-making capacity will likely to be substantially weaker. Sustainable solutions will require successful marketing of new products and services, values and lifestyles.

Marketing should not be seen simply as part of the problem. It provides a primary means of communicating value to consumers; essential for success in business. It seems to achieve

mutually beneficial outcomes for customers, and for the organisation involved, as the management of demand should have an internal focus as well (Corkingdale *et al.*, 1996, p. 4). Marketing must therefore be closely scrutinised by policy makers in industry and government, as it is the most public of an organisation's activities. Although innovative environmental products and services have put considerable pressure on traditional marketing approaches, its fundamentals need to be understood.

A market can be segmented using demographic, geographic and behavioural characteristics, as well as other factors. Consumer theory focuses both on physical purchasing and the decision-making processes when consumers evaluate, use and dispose of goods (Peattie, 1995, p.54). Consumer evaluation involves searching and assessing information, and this process is particularly relevant to sustainability. Also important is the 'positioning' of products in the consumer's mind in relation to known direct or indirect alternatives. Each consumer has a 'mental map' of products, which include the dimensions of price, value, durability, convenience, reliability and after-sales service. This positioning of a product or service depends upon the consumer's experience or information gained (Peattie, 1995, p.64). Various marketing strategies are used in positioning, including creating a new 'niche', re-positioning of an existing product, re-positioning the competition or positioning a product close to the market leader. All these factors will need to be explored in relation to innovative, 'clean green' food products.

One such strategy is 'branding', an approach to marketing which involves reliance on 'trust' in the company's name or symbol, encouraging the consumer to by-pass analysis of information before purchasing, and even to 'forget' the detailed reasons why a certain brand is chosen (Peattie 1995, p.165). This technique is used to promote consumption through brand loyalty programs and to some extent has been taken up within eco-labelling.

The marketing 'mix' is a fundamental part of any strategy. It is generally considered to include the product, price, position within the market and distributional aspects, whilst other less controllable, external variables include political, legal, technological, societal, economic and competition factors (Dibbs *et al.*, 1994, p.15). The mix also depends on each product's 'life cycle' stage which, in marketing terms, is whether a product is being introduced, growing, maturing or declining in the market (Corkingdale *et al.*, 1996, p.44).

Turning from marketing to labelling, we find that eco-labelling is the second main market-based instrument for implementing sustainable consumption through informed choice. The widely accepted definition of an 'eco-label' is that it is a voluntary trademark awarded to products considered to be 'less harmful' to the environment than other products within the

same market category (CSD, 1996a, p.2). The International Standardisation Organisation (ISO) further defines three types of eco-labels: national programs, producers' claims and independently-verified product information (OECD, 1997c, p.10). Within each type there is considerable variety, as in, for example, the criteria used in national, third party 'seal-of-approval' programmes (Welford, 1995, p.169). It is the flexibility of this information instrument that allows it to be used across a wide range of products and consumer audiences, to either positively or negatively guide consumer decision-making. A rare example of the latter is 'a skull and bones' symbol used in Sweden to designate a toxic impact on nature. Eco-labelling schemes are usually 'positive' and government-endorsed (Heiskanen *et al.*, 1995, p.26). Labelling criteria can also assist the decision-making of procurement managers, product designers and engineers, thereby accelerating environmental product development on the supply side. Both the OECD (1997c) and the WBCSD (1999) recognise eco-labelling as an important technique for environmental management and the CSD's Agenda 21 considers eco-labelling to be a key mechanism for changing consumption patterns (CSD, 1995)

The world's oldest environmental labelling scheme is Germanys' *Blue Angle*, which began in 1978. Most other schemes were devised in the wake of the Brundtland Report and the Rio Earth Summit, and include Canada's and New Zealand's *Environmental Choice* (1988 and 1990 respectively), Japan's *ECO-Mark* and the Europe's *Nordic Swan* (both in 1989), USA's *Green Seal* and Austria's *Umweltzeichen* (both in 1991), and the 1992 eco-labelling schemes of the EU, The Netherlands and other countries. By 1994 there were over 20 eco-labelling schemes operating in the world, with most being nationally-based, key exceptions being the programs of the EU and the *Nordic Swan* (CSD, 1996a, p.11). The growing list of schemes is not confined to industrialised countries and now includes Brazil, India, Indonesia and Malaysia (Panos, 1997, p.12) and Singapore, Taiwan and Thailand (Jacobsson and Jonsson, 1998, p.12).

Significantly, Australia is one of the few OECD countries without an eco-labelling scheme. The State of Victoria introduced the *Green Spot* labelling program in 1989, which was then absorbed into Australia's *Environmental Choice* in 1991. But the program lasted only three years and the reasons for its failure will be discussed in chapter four. However, it should be noted now that this indicates that sustainability may be regarded in Australian policy circles mostly as a supply side matter. If so, such a view would ignore the fact that labelling is one of the most widely accepted mechanisms for linking consumer information to behaviour in the market, being widely accepted for health advice and nutritional content in food.

Consumers benefit from eco-labelling as it helps differentiate otherwise identical products and services. But the relationship between marketing and eco-labelling is more than simply providing a basic decision-making tool for consumers. One of the main reasons for establishing national eco-labelling schemes is to resolve the problem of misleading advertising and environmental claims made during the wave of 'green' marketing in the late 1980s. Eco-labelling is seen by government to provide a transparent 'code of practice' for marketing and to provide concise, independent and authoritative verification of claims.

In theory, the producer benefits too, as increased customer satisfaction and a competitive advantage offset investment in improved product to meet labelling standards. However, voluntary participation in a labelling scheme is dependent upon those benefits exceeding costs incurred by the producer in providing new consumer information, changing packaging and often paying licensing fees for third party certification. For example, the EU requires companies to pay 0.15 per cent of their annual European market turnover for an eco-labelled product (CSD, 1996a, p.11). Yet costs need to be kept in perspective as failing to satisfy consumer concerns or to disclose information undermines community support for a company's licence to operate at all (Willums, 1998, p.90).

While the focus is on food in the thesis, the experiences of other industries and products will be briefly discussed in chapters four and five when considering the effectiveness of eco-labelling as a consumer decision-making tool. As labelling is at the centre of contentious policy issues of citizenship rights, trade and corporate social responsibility, these matters will also have to be considered.

The key information tools of marketing and eco-labelling can directly influence consumer response to innovations and, in turn, reward business for voluntary improvements in environmental performance. The provision of effective consumer information therefore becomes critical in stimulating further investment in innovative, environmentally responsible products. Because government, business and NGO strategies usually rely on a combination of several tools, the wider context of information provision will also need to be considered.

2.7 The rationale for 'informed choice'.

There is considerable weight, some would say 'faith', being placed in the role of consumers and their abilities to make informed choices. This reliance is often indirect or presumed and is similar to how science and technology is expected to answer supply side problems. Individual citizens directly impact on sustainability through their decisions as business

purchasers or private consumers. Despite public debate focussing on voting behaviour, most decisions that affect the environment are made through daily purchases. However, consumption must be considered in the context of the roles, responsibilities and rights of people as citizens.

The phenomenon of 'informed choice' is strongly linked to the free market. The fundamental idea that individuals can improve their lives through acting freely in the market place is an article of faith in neo-classical microeconomics. (Similarly, economic growth is seen as a pre-requisite to overcome under-consumption in developing countries.) Thus most actors advocate the market approach to changing individual action towards more sustainable consumption patterns: 'sustainable consumption is not something that can be imposed. Rather it has to be an informed choice by households, corporations and governments in favour of sustainable goods and services' (MoE-Norway, 1998, p.17). While some doubt whether individual decisions make a difference compared to purchasing by larger buyers, the thesis takes the view that individuals, households and other social units remain equally important for sustainability.

The WBCSD sees a role for business in 'making accurate, scientifically sound environmental information available to customers and the public so that they can make informed decisions about purchasing, use and disposal' (Falkham, 1996a, p.11). In the case of food, 'the better informed consumers are, the more opportunity they have to influence food production and quality. For this reason the dissemination of information and knowledge to consumers is crucial' (MoAFF-Sweden, 2000, p.5). Because informed choice is relied upon so heavily, careful monitoring is needed to ensure that the tools of marketing and labelling are indeed effective in delivering sustainability.

Behind the rationale of informed choice is the assumption that consumers will decide through a long process; recognise a need or want, search for relevant information, evaluate alternatives, make a purchase decision then finally undertake post-purchase use, disposal and evaluation (Peattie, 1995, p. 84). However, Peattie reminds us that consumption itself is not simply an economic process but also a social and cultural one (p. 81). While market research is based on behaviour that is observable and measurable, the effect of intra-personal variables, including personal ethics and group identification, is often less researched. The expectation is that an individual will act rationally. It is assumed that consumers will use information to make judgements and change behaviour accordingly.

But do consumers act rationally? According to marketing theories, information processing to make a purchasing decision is influenced by two main factors; perception, and how

information is stored, enhanced and retrieved by the receiver. It becomes a mater of ensuring messages from senders are effectively screened, decoded, stored and then encoded for a satisfactory response by the receiver (Shultz *et al.,* 1996, p. 24). Other social roles played by consumption include entertainment, self-identity formation, reward and as a proxy measure of success. All of this weakens the conventional marketing view that consumption is a relatively rational decision carried out by asocial individuals. However, the view that consumption is primarily about attaining social satisfaction is not entirely valid (Peattie, 1995, p.81). Ropke argues that 'human rationality is related to the striving to attain a high position in a hierarchical society and increasing consumption is an important aspect of this process' (1999, p. 408). As such it 'perfectly rational to increase one's scale of consumption'. If this is the case, then the sustainability challenge is indeed difficult.

According to McKenzie-Mohr, the 'rational-economic model' of human behaviour assumes that individuals systematically evaluate choices but decide on economic self-interest. This suggests that 'an organisation need only inform the public that it is in their financial best interest and consequently the public, being "rational", will behave accordingly' (1996, p.2). Assumptions also underline the 'attitude-behaviour models' applied through education and public awareness campaigns, in which changed attitudes are expected to lead directly to changed behaviour. Both models are also expected to apply when citizens make 'informed choices' at the ballot box. These assumptions often confound policy makers, particularly because, whilst voters can 'change the rules of the game', the potential for change through consumers as purchasers 'can be easily overestimated' (Rensvik, 1996, p.10).

For the voter, policy debates concerning sustainability are generally characterised by stakeholders arguing issues of 'freedom of choice', cost transition burdens and inter and intra-generational implications of various lifestyles. The actors apply considerable cost and effort to counter accusations that their facts are shallow and manipulative, propaganda or misinformation. However, it is widely acknowledged that increasing community cynicism over the roles of all actors in such debates. Marketing and advertising, although powerful tools for influencing political actions and attitudes are especially discredited. The choice often comes down to perceptions concerning the legitimate role of emotional arguments versus scientific facts; an issue which is further complicated by the application of values in all positions taken and statements made by all actors. As voters become more cynical or disengaged, actors appeal for more 'education' for citizens and consumers, although reference to formal and informal education learning processes are generally absent.

The concept of 'informed choice' therefore links not only to the market, but to basic questions of democratic practice. Prior to the Rio Earth Summit, it was suggested that the

lack of public participation in those economic decisions clearly affecting the environment, was a threat to democratic traditions in industrial countries: 'Throughout the eighties, politicians have been preoccupied with making quick decisions. When most people feel railroaded, they cease to care - these are dangerous tendencies towards disintegration in a democracy' (Flyvberg, 1992, p.18). However, by 1995 a common view was that 'informed human choice, mediated through government polices, civil initiatives and individual decisions' will create the grounds for optimism in face of the challenges next millennium (Gallopin *et al.*, 1995, p.1).

With policy approaches to changing consumption patterns moving towards free market determination, the role of social instruments, especially information, becomes pivotal. However, any self-directed process of change risks being too slow and too inconsistent across society, sectors or organisations. The alternative of centrally controlling broad social change processes is equally risky and ineffective. The information and so-called 'educative' processes of former Soviet Bloc countries failed to generate universal and long-term public commitment to policy objectives. It will be interesting to investigate whether any gaps between the actual behaviour of citizens in industrialised countries and their environmental attitudes as revealed in surveys reflects a similar situation.

A related issue is the right of citizens to environmental information. This is a significant issue as advertising is encouraging material consumption 'without presenting the down-side' of the impact of production processes, and product use and disposal on the environment (Bugge, 1995, p.4). In the Nordic countries, comprehensive legal and political instruments are used to ensure access to environmental information from public authorities in the belief that 'the ideal goal is to be able to inform the consumer of the products' environmental characteristics from cradle-to-grave. However, serious methodological problems involved in such an approach have slowed progress to date' (Bugge, p.4). This reference to information from life cycle analysis will be examined later in the thesis.

If mainstream consumers are to make informed choices, then the information itself requires examination. The provision of clear, accurate and reliable information on which to make sound purchasing decisions is increasingly important (Falkham, 1996a, p.25). However, the rational economic approach of predicting behaviour assumes that self-interest is paramount and that a minimum product price is essential. According to Peattie, 'in practice, consumers are often poorly informed about price. They assume that higher prices indicates higher quality or they avoid buying low-priced brands because it does not fit with their self-image' (1995, p.91). He adds that 'green consumers' who were made aware that environmental costs have not been included in prices could then make a 'highly rational but economically

disadvantageous purchase'. The role of pricing will also need to be examined, as informed consumer choice appears to be very dependent upon an individual's willingness to pay. Conventional marketing practices that continue to emphasise low prices make the task of building consumer competency to discriminate in favour of environmental goods and services a challenge in itself. It is another factor that potentially weakens the theoretical rationale of informed choice.

2.8 Why should food be recognised as a critical issue?

This section presents a case for considering food consumption choices in industrialised countries as a 'hard edge' issue for sustainability. Some of the most critical pressures regarding sustainability converge at food production and consumption. These include poverty, biodiversity loss and climate change. Food choices by consumers in industrialised countries impact on natural resources in countries with high poverty and accelerating population, particularly as these choices often drive increasing food exports from developing countries. Not only is food production being globalised but so too are consumption patterns, through 'fast food', customised diets and the export of 'ethnic' foods.

Food has been selected for micro-level verification of the macro-level case in this thesis for several main reasons. Firstly, adequate food and freshwater are essential human needs and should therefore be central to discussions concerning sustainability. Yet, agricultural industries are generally overshadowed by other sectors in sustainability policy, despite growing concerns over both food security and food safety. Ironically, the technological solutions to global food security are creating unease within developing and OECD countries over food safety. 'Post-industrialised' agriculture is basically 'smart biotechnology', where crops and livestock are genetically engineered to require less environmentally damaging inputs such as pesticides and fertilisers. This supply side approach will require a balanced analysis from the demand side, beginning with a comprehensive review of current food production and consumption issues.

Decades after the 'magic' inputs of irrigation, fertilisers and pesticides created the highly productive 'green revolution' in global food production, food security is entering the general policy debate again. The three per cent growth rate in the world's agricultural production during the 1960s is steadily slowing to an expected 1.8 per cent by 2010. The expectation of higher per capita food supplies to eliminate problems of nutrition and food insecurity is not underpinned by realities according to the UN Food and Agriculture organization (Alexandratos, 1994, p.2).

The biggest challenge is expanding global food production to match the widely expected doubling of the human population to 10 billion by 2050. The task is made more difficult by the unreliability of food production estimates beyond a decade and the uncertainty of what individuals consider to be 'acceptable' levels of food consumption, as evident by rising obesity levels. Although maintaining a balance between supply and demand for food is a priority for human activity, current levels of poverty indicate that it is not happening. In their policy document, *A 2020 Vision for food, agriculture and the environment,* the International Food Policy Research Institute (IFPRI) concludes that a 'significant expansion of cultivated area is not feasible in most of the world' and growth in food production has begun to lag behind demand (1995, p.1). As the world's population continues to grow at an unprecedented 90 million every year, several main challenges are identified, including:

- 1.1 billion people living in extreme poverty with 800 million having no guaranteed access to food;
- 2 billion hectares, or nearly a quarter, of agricultural land already degraded since 1945; and
- marine fisheries collapsing in all parts of the world with wild fish harvesting no longer increasing its yields (IFPRI, 1995, p.1).

Food production is particularly constrained by the capacity of water resources to supply needs and act as sinks for chemicals. Currently, agriculture uses two thirds of the world's freshwater supplies and is the largest polluter of water (WBCSD and UNEP, 1998, p.8). However, more water is being diverted to supply growing urban and industrial demand. By 2025, two thirds of humanity is likely to be living in 'water-stressed conditions' (UNEP, 1999, p.1).

According to the World Resources Institute (WRI), more frequent and severe nitrate contamination of drinking water, crops and coastal fisheries from algal blooms 'can be expected to increase dramatically' (1999, p.3). The cause, identified by the WRI, is the rising use of inorganic nitrogen fertilisers for grain feed for animals, which, in turn, produce more manure, especially in feedlots. Such ecological impacts of food production methods are not confined to developing countries. In the relatively 'clean and green' agriculture of Switzerland, only half the 230,000 tons of nitrogenous fertilisers used annually are absorbed by the crops, with the remainder going into surface and ground water supplies (Belz and Hugenschmidt, 1995, p.231), whilst in Australia, conventional land use practices are incurring staggering losses to the natural capital base (McEachern, 1997) with annual estimated lost production in 1993 of $760m a year (COA, 1995, p.2) and with an annual repair costs totalling $3billion by 2000 (Wahlquist, 2001).

Overall, 'the loss of the agricultural resources base is a consequence of many factors, including poverty and desperation, expansion of human settlements, overgrazing and overcropping, mismanagement, ignorance, and economic rewards for short-term production rather than long-term stewardship' (Meadows *et al.,* 1992, p.53). The consequence is the continuing pollution of water, air, soil and biological resources that underpin food production and the accumulation of toxins in food chains that threaten all life, including human.

The IFPRI believes that the 'dramatic' increase in pesticide use in agriculture has compromised human health, contaminated soils and water, exterminated species and led to pesticide resistance, while food 'losses to pests are still high' (Pinstrup-Andersen, 1995, p.11). Meanwhile, other ecological problems occur along the food chain, including emissions of the greenhouse gas methane from livestock, energy use in transport, refrigeration and cooking, chemical use in cleaning food manufacturing equipment, and waste. For example, food packaging accounts for 25 per cent of the total waste in Switzerland (Belz and Hugenschmidt, 1995, p.232).

The Worldwatch Institute's Lester Brown has long expressed concern about the diminishing returns from industrialised agriculture. Fussler paraphrases Brown's main two arguments as follows. The first danger is that ecological systems approaching their limits are sensitive to disruption as 'a few major crop failures could cause widespread hunger and chaos in the world grain markets. Many people might die before market and technological reactions come into play'. The second danger is that if scarce animal, especially fish, protein becomes reserved for the rich, then 'there could be no more graphic illustration of global inequality, and nothing more likely to stir the fires of discontent in poorer parts of the world' (Fussler, 1996a, p.45).

An increasing number of business leaders are openly discussing the broader implications of the food security issue. Fussler, for example, does not dismiss Brown's concerns as simply the 'rebottled' arguments of Thomas Malthus, who had predicted in the eighteenth century that population would always outstrip food supply. Instead, Fussler cautions that 'Brown's writings are not a cry of doom, they are more a plea for innovation to manage natural resources more efficiently and share them more equitably' (1996a, p.45). One explanation as to why many agri-business leaders are reluctant to express a similar position could be that 'in untrammelled free market economics... scarcity is an economic idea, not a physical reality...and Malthus' arguments of a collapse due to excess demands on the resources available to a growing economy are seen as ungrounded' (Ehrenfeld, 1995, p.7)

There are broader 'quality of life' issues that need to be considered. 'In the rich parts of the world, there is growing polarisation between the elite who eat varied, nutritious, high quality food, and the broad layers who live increasingly from industrially processed, carbohydrate- and fat-rich bulk products' (SAEF, 1997, p.5). The World Health Organization, which is now led by the former Norwegian Prime Minister, Gro Brundtland, believes that as the 'richer parts of the urban population' in developing countries 'fall pry to western lifestyle', new diseases associated with changes in diet will threaten health and development (1997). Health professionals in all countries have longed believed that the education level of consumers is as important as the cost of good food.

One of the emerging challenges concerning health education is the range of issues linked to long-term exposure to artificial chemicals, especially through the food chain. Colborn, Dumanoski and Myers, in their 1996 book *Our Stolen Future*, highlighted bioaccumulation of synthetic chemicals resulting from the high use of hormones, antibiotics and pesticides in intensive food production processes. Food safety concerns of consumers have risen even further with the link between BSE (mad cow disease) and intensive agricultural practices.

However, it has been estimated that 'rising levels of consumption by the rich and doubling of the world's population over the next 40 years-50 years would require a Factor 4 increase in food production' (Factor 10 Institute, 1997, p.10). A life cycle analysis of animal food production shows considerably more fossil fuel energy is required than for production of plant protein. A Swedish study has found that a balanced diet is possible by halving the current two-thirds protein intake from animal products (Nordic CoM, 1998, p.38). To produce one kilo of protein from beef requires nearly 300 per cent more energy than from milk (p.36) and there is difference of factor 4-5 between pork and leguminous plants (p.37). When the consumption and pollution of water resources is added to the environmental impact of grain-fed beef cattle production, the worldwide promotion of such protein sources becomes questionable. However, since the 1960s world cereal consumption has more than doubled and meat consumption has tripled and continues to accelerate (WRI, 1999, p.3).

One pathway towards a more eco-efficient agriculture is that of organic or biodynamic food production. Organic farming avoids artificial pesticides and conventional chemical fertilisers, using instead organic matter, cultivation techniques and the biologically-based 'integrated pest management' for pest control. The term 'organic' has become synonymous with 'ecological' in Europe. A 'halfway' alternative to converting all production to ecological methods is Integrated Crop Management (ICM), or Integrated Production (IP), which combines biological control with 'rational chemical control' to achieve overall

reduction of artificial chemicals. Pesticide use has significantly declined where IPM schemes have been adopted (Weinberg, 1995, p.30). Many agronomists advocate these integrated cultivation systems as the way to balance the 'radicalism' of organic farming. However, organic food is experiencing the fastest growth in food production and consumption in Europe, as it is Australia and many other industrialised countries. In developing countries, especially, there been a significant increase in sustainable yields from using organic and 'low-tech' methods (*New Scientist*, 3 February 2001).

Organic farming is included in calls for agricultural reform in OECD countries from the former President of Iceland, Vigdis Finnbogadottir, who is concerned that, despite food surpluses in industrial countries, millions of other people continue to starve. Intensive and specialised agriculture is undermining farming as the 'very essence of a sustainable livelihood', and subsidising organic production, she argues, would be more beneficial than supporting excessive use of artificial fertilisers or 'set aside' schemes (1994, pp.136-140).

The Swedish Association of Ecological Farmers (SAEF) also questions the acceptance of current consumption patterns in industrialised countries, stating that 'despite great increase in overall production, industrial agriculture has not succeeded in establishing food security. While the affluent regions and social classes struggle with surplus production and surplus consumption, close to one fifth of the world population lives in constant undernourishment'. A prime cause is stated to be the 'extremely resource demanding production of meat for a minority of the world's population' (SAEF, 1996, p.5).

One problem for organic farming and IPM is increased labour costs. Food is a good example of the conventional pricing process of goods and services in relation to internalisation of environmental costs. 'Ordinary consumers in the industrial world have by and large lost touch with the realities of food production...our present production system means a wide selection of cheap food. Long-term costs of environmental degradation and non-renewable resource use, however, do not appear on the price tag. A large portion of the wider costs of the production system is paid via taxes. This creates a distorted image of the actual costs of food production' (SAEF, 1996, p.5).

The internalisation of costs in food production is complex as it involves long-term cost burdens in damage to the health of individuals and ecosystems. Such costs are very difficult to communicate, as urban consumers are increasingly 'out-of-sight' of production sites, especially with increased sourcing of food from international suppliers. The question is whether and how should consumers be made aware of the impact of their purchases.

Pricing of food is central to the health of rural and regional communities in all countries. The farmer share of retail market prices appears to be falling steadily as commodity prices fluctuate, global trade brings in more players and the cost-price squeeze increases with inputs for more intensive agricultural production growing. It is a significant socio-economic problem in countries such as Australia and Norway, where low prices are driving many farmers into marginal lands, thereby hindering their adoption of more sustainable techniques. Australian farmers, in particular, can sometimes share the plight of farmers in developing countries who grow low-paying cash crops and are regularly forced to buy food on credit. This is yet another reason to focus on the demand side, as the issue of pricing is as much a question of consumer response as it is market structures.

A second potential pathway to sustainable agriculture is genetic engineering. Biotechnology has considerable potential to solve the challenges of providing for the growing food needs of the human population while minimising the environmental impact of increased food production. Whilst governments recognise the benefits to health, agriculture and the environment, the need for safe management of these products and the technology involved requires close attention. Australia has lagged behind Europe in establishing specific legislation for the control of genetically modified organisms (GMOs) with labelling laws only coming into operation in 2001. The risks and opportunities with experimental transgenic plants and crops have entered public policy debate in many countries. Norway has banned production of genetically engineered (GE) foods and has introduced strict regulations for the marking of food products containing genetically modified organisms.

Debate continues over whether the benefits of genetically modified crops (resistance to disease, less pesticide use, added nutritional value and improved yields for farmers) can outweigh concerns over their safety, ethics and overall sustainability. The Swedish Ministry of Agriculture's policy states that 'since experience of genetic engineering and GMO in food production is limited, it is important to adopt a cautious and preventive approach.' In addition, the official view is that 'all food products from GMO source should be clearly labelled so that the consumer is able to make an informed choice' (MoAFF-Sweden, 2000, p.11).

Because GE food is not openly marketed in Norway, ecological (organic) food has been chosen as the 'innovative' product to focus on in terms of consumer behaviour. It is possibly one of the most difficult products to communicate costs and benefits of to consumers and as such represents a 'hard edge' challenge for information tools. Ecological food parallels the process of genetically modified foods as both represent a relatively new product choice for consumers and reflect similar claims concerning sustainability benefits.

Consumption of food involves a daily choice of basic commodities and milk has been chosen for closer attention. High protein diary products represent the opposite of a 'once-off ' consumption of the base itself. The Norwegian National Institute for Consumer Research (SIFO) has chosen food and beverages (including milk) for key attention in a green household budget development project, as these account for the highest part of (24 per cent) of total budget expenditures of a household of two adults and two children. This is nearly equal to transport for the household's direct and indirect share of energy consumption and other impacts on the environment, including emissions of greenhouse gases, threats to biodiversity, consumption of non-renewable resources, discharges of hazardous and toxic substances, and waste (Vitterso *et al.,* 1998, p.34). More specifically, the thesis will follow the demand level for organic milk carrying the *Debio* ecological label in Norway. In doing so, the complexities reflected in choosing food products generally will be examined.

2.9 Why should Norway be regarded as a relevant indicator of progress?

As introduced in chapter one, this thesis investigates sustainable consumption from the perspective of another industrialised country in order to access additional literature, researchers and global actors. Field research was undertaken in the Nordic countries, with Norway identified as a comparable case of relevance to Australia. Norway was selected to study both the macro and micro level aspects for four main reasons. Firstly, as a Scandinavian country (along with Denmark and Sweden) it allows an insight into cultural thinking that is different from the more familiar situation in the United Kingdom and North America. Secondly, Norway is also one of the world's wealthiest nations per capita income, higher than Australia, mainly due to being the second biggest exporter of oil after Saudi Arabia. It is one of few countries with 'full' employment (OECD, 2000). 'The third reason is also related to the economic well being of Norwegians. Norway should clearly demonstrate the conventional theory of sustainable development; that sustainability will accelerate once strong economic factors are in place. A 'reality check' on the consumption levels, patterns and policy in Norway should therefore provide an interesting indicator of global progress. This is even more relevant considering the fourth reason; the historical role of Norway in international policies for sustainable development.

Generally, the five Nordic countries of Norway, Sweden, Denmark, Finland and Iceland are recognised as being at the leading edge of sustainability policies over the last three decades. Of the five, Norway has arguably the most in common with Australia, because it is:

- a late industrialised country retaining an agricultural, fisheries and natural resources-based economy (especially raw energy), unlike the mainly manufacturing economies of Sweden and Denmark;
- geographically peripheral to larger political players in Europe (as Australia is with Asia) with characteristics that create domestic distortions (isolated populations, economic dependencies and cost of infrastructure), including several clearly distinctive dialects and legislation requiring use of two languages ('bokmal' and 'nynorsk'). Norway's coastline, excluding a considerable number of large fjords, is 2650km long and its landmass totals 385,639 km2 (including Arctic islands). With a total of 4,370,000 citizens, Norway also has a low distribution density;
- a relatively homogenous country in which, even with a high proportion of refugees, the process of debate should have fewer variables. One of Europe's only populations of indigenous peoples, the Sami, live in Norway;
- a traditionally strong government role in society. Since 1992, new taxes and levies to internalise some of the environmental costs in prices have been applied, including a tax on fossil fuel, despite Norway's export revenues from oil and gas being greater than Australia's main export, coal. Norway has a CO2 tax on natural gas and petroleum, on electricity, and on fertilisers. It also charges a deposit on bottles and cars, and levies a 23 percent consumption tax on food;
- a culture that traditionally values quality, egalitarianism and inconspicuous consumption, highlighted by former King Olav V using public transport during the 1973 oil crisis; and
- a society with strong democratic traditions, although Norway is younger than Australia, having gained its independence from Sweden only in 1905. As a non-colonial power, it has gained respect in many developing countries, played a lead role in forming the League of Nations and the United Nations, appointed the world's first Human Rights Minister in 1998 and in 1999 was one of the first countries to initiate the cancelling of debt owed by some developing countries.

Norway's experience in redefining its role with neighbours, such as the emerging economy of Russia and the free trade and political forum that is the European Union, is also relevant to Australia. It is in a climate sensitive to national parochialism that Norwegians act as consumers and citizens. Norway's recent colonial experiences, physical isolation and strong sense of individual interdependence, all conduce to a rejection of standardisation. This thinking is even stronger in Iceland which, along with Norway, has voted continuously to stay outside the European Union. Norwegians prefer to cooperate with their Nordic (and especially Scandinavian Danish and Swedish) cousins in a similar way to Australia's relationship with New Zealand and, increasingly, North America.

In terms of agriculture, the Nordic countries offer a highly relevant comparison. Australia is one of the world's largest net exporters of food. However, Australia's land use practices have been based upon fertile North American and continental European systems, ignoring the fact that Australia has only six percent arable soils (McEachern, 1997). It would make more sense to compare Australia's sustainable agriculture policies to those in large countries on the 'edge' of Europe with equally harsh environments. Sweden has only seven percent or 3 million ha of arable land and Norway even less, with only 3.5 percent of the land area cultivated for agriculture.

Norway is suitable for analysing the effectiveness of information instruments in regard to ecological (or organic) food as both its supply and demand are less than in Denmark, Sweden or other small European countries such as Austria and Switzerland. The Norwegian lessons are more relevant to Australian circumstances as the *Debio* label for ecological food is still in an establishment phase despite operating for several years in one of the oldest markets with experience in eco-labelling, the non-food *Nordic Swan*.

Norway's general learning and decision-making infrastructure also makes it a relevant study. Its formal education sector has sought to build long-term competency for sustainable behaviour and Norwegian governments have extensively invested in environmental education. This policy follows a worldwide view among governments, business and NGOs that it is more effective to educate children than to re-educate current decision-makers. The Brundtland Report stated that 'most people base their understanding of environmental process and development on traditional beliefs or on information provide by a conventional education' (UNWCED, 1987, p.113). In response, a Norwegian Parliamentary White Paper on Environment and Development identified the need to establish 'a system of education which gives learners knowledge, attitudes and skills enabling them to take a standpoint and contribute to solving the environment and development problems we face' (MoERCA-Norway, 1995, p.7). Implementation began in 1993 across all levels of formal education, addressing decision-making and lifestyle factors, because:

> ...human beings are a part of the natural environment and are constantly making deciosns that have repercussions not only on their own welfare, but also on the welfare of other people and their surroundings. The decisions have consequences which extend beyond national borders and across generations; our lifestyles affects our health; our country's consumption causes pollution in other countries; and our waste products are a problem for coming generations (MoERCA and MoE-Norway, 1994, p.10).

Norwegians generally pay considerable attention to the need for citizens in all industrial nations to have 'solidarity' with the people of developing countries. The policy response of

its government, business and NGOs to changing unsustainable consumption patterns has included international conferences and establishing research programs. It is therefore revealing to analyse Norway's domestic progress (and the barriers encountered), especially to see whether, and how, its consumers are changing practices. Although small, Norway is independent, wealthy and has a highly educated and globally aware population. Its lessons would indeed be a good benchmark against which to measure progress towards the finding of effective mechanisms for changing consumption patterns.

Throughout the thesis other Norwegian cultural factors will be introduced as relevant to help analyse the socio-political aspects of how 'informed choice' is developing. Identifying how social norms shape Norwegian consumer decision making, in the context of other Nordic and European countries, will help clarify potential barriers in other OECD countries, particularly Australia.

CHAPTER 3:
THE IMPACT AND EFFECTIVENESS OF DEMAND SIDE TOOLS

3.1 Introduction

The aim of this chapter is to analyse the current state of progress towards changing unsustainable consumption patterns. It identifies the gaps between the expected and actual performance of the demand side policy instruments. A review of global demand and Norway-specific trends and the known outcomes of marketing and eco-labelling is followed by consideration of the contradictions emerging. Verification of the patterns, trends and relationships at the macro level is related to those at the micro situation of demand in Norway, as it applies to food consumption in particular.

A description of what makes an 'informed consumer' and a review of the evidence about the level of consumer competency and the adequacy of information tools are attempting to facilitate capacity to make informed choices is then provided. The chapter concludes with a discussion of issues arising from the macro level trends and likely barriers to improved demand.

3.2 An audit of the current demand side

Analysis of sustainable consumption trends is difficult as no indicators are available, although the OECD is developing some around 'consumption clusters' - including food, in which the measure will be market share of more sustainably produced food (MoE-Norway, 2000, p.37). However, an overview of current consumption rates, of introduction rates of innovative products, and of impacts from supply side efficiencies, does raise doubts about the overall effectiveness of sustainable production and consumption policies to date. The increasing volume and variety in international trade is adding to demand worldwide, with marketing by international corporations driving a 'globalisation of desire' and aspirations to lifestyles that involve unsustainably high levels of consumption (MoE-Norway, 2000, p.34). According to the 1998 *Human Development Report* from the UN Development Program (UNDP), 20 per cent of the world's population living in high-income countries already consume 86 per cent of the world's goods and 45 per cent of all meat and fish, while one billion people continue to live without access to fresh water and sanitation. The UNDP report also notes that Africans per capita now consume 20 per cent less than 25 years ago,

further revealing inequalities in consumption trends. Thus 'expectations have gone global but the affluence has not' (*Reuters,* 9 September 1998).

The OECD believes that despite initiatives to influence consumption patterns in some countries, it is impossible to reach an overall assessment of their success due to three factors. Firstly, while measures are in place to affect consumer behaviour, countries 'have yet to develop coherent strategies'. Secondly, national indicators of sustainable consumption are not yet available. Thirdly, the little information that exists on the relative effectiveness of specific policy measures is limited due to the short period in which these initiatives have existed and the need to consider 'wider changes in a country's economy and society which may work with or against the initiative'. However, preliminary findings indicate, for example, that measures in the USA to contain private vehicle use and promote public transport 'have had little success so far' due mainly to a lack of pricing and taxation incentives (OECD, 1997a, p.2).

One reason why it is difficult to measure progress in any sustainability policy is the lack of set targets even on the supply side, as demonstrated by continued delays in ratifying the Kyoto Protocol on greenhouse gasses. The main mechanism for implementing national sustainability policies at the local level - action plans for Agenda 21 - has only been partially implemented in most industrialised countries. Meanwhile, the material intensity of lifestyles in industrialised countries continues to increase. The Wuppertal Institute's study of the hidden material consumption, or the 'rucksack' burden, of Germans shows an annual consumption of 76 tonnes of solid materials per capita and 60 tonnes of water. Only a small percentage actually results in new infrastructure with most becoming sewerage, solid waste and atmospheric emissions. Food is 10 tonnes, in which the hidden component is nearly 2 tonnes erosion and 4 tonnes of wasted, unconverted materials (Fussler, 1996a, p.159-160; Bringezu, 1997, p.47).

Although there has been considerable energy saving by producers in most industrialised countries, the use of products and services by consumers has increased, causing energy per capita to rise continuously. 'There is no evidence of a real reduction in energy consumption, which is necessary if we are looking for actual environmental benefit' (Hopfenbeck, 1993, p.7). In Europe, for example, household spending accounts for over 70 per cent of the total consumption of raw materials, energy manufactured goods and food. Impacts on waste, transport and landuse increase as the trend towards fewer people per households continues. In the 1980s, the number of households in Europe grew by 10 per cent (EEA, 1997). In Australia, an Australian Bureau of Statistics (ABS) study shows that households are largely

responsible for the increasing growth of CO2 emissions as they use 56 per cent of coal generated electricity (*ABC News,* 17 May 2001). Statistics Norway figures reveal per capita private energy consumption accelerated by 4 per cent in 1998 compared to an average one per cent increase over the previous decade (*Norway Daily*, 19 March 1999). Two trends were observed in Norway that would reinforce this pattern. The first is unprecedented marketing of car air-conditioning for a few 'hot' summer days, resulting in reduced fuel efficiency year-round. The second is a surge in television marketing of high-speed car, boat, truck and tractor races that has over-shadowed the traditional 'lower consumption' races of running, sailing and, even to some extent, skiing.

Consumer demand is the main reason why the USA government of George W Bush is increasing fossil fuel supplies, withdrawing from the Kyoto Protocol and abandoning any further standards for fuel efficiency in American cars (*BBC World News,* 15 May 2001). There is scientific consensus that human-induced climate change will impact on food production, biodiversity and living conditions in every region. Energy is also linked to food consumption as transportation occurs along the entire product chain, especially in exporting. Food is travelling further today due to international trade, more centralised production sites and fewer operators in food processing and retailing. As the deregulated and highly competitive free market has grown, so too has the movement of goods and services. Significant travel is also involved in shopping, especially at large shopping malls in outer metropolitan areas. Overall demand for transport is increasing significantly and this is one of the sectors with the greatest environmental impact (Rensvik, 1996, p.32). With energy being at the centre of sustainable consumption and, in Norway's case, also the economy, its situation deserves closer examination.

The trend towards consumers choosing private transport suggests that consumption patterns are heading in the opposite direction to sustainability (Willums, 1998, p.54). While overall human travel has increased in distance and frequency, businesses and individuals are moving away from public transport with an expected doubling of road traffic in the UK by 2025 (Rensvik, 1996, p.21). According to the OECD *Report on Sustainable Consumption and Production* in 1997, measures (including information) to influence individual travel decisions 'have had little effect to date relative to the underlying growth in demand' (OECD, 1997b, p.6). A 'catch 22' situation is emerging between supply and demand. Although the energy industry knows that reduced oil consumption is required, it is 'understandable' that it is reluctant to fully commit to renewable energy supplies while government and consumer demand for oil continues (Panos, 1997, p.12).

Consumption trends can be linked to the model of 'over-consuming lifestyles' being communicated across the developing world. Since trade liberalisation began in India in the 1990s, advertising has increased by 35 per cent annually and global communication satellites are also beaming advertising into remote villages. 'Far from encouraging more measured consumption, one of industry's principal activities is advertising, which promotes the very same yearning for luxury lifestyles and status-symbol consumption that underlies so many of today's environmental problems' (Panos, 1997, p.18). The author recalls seeing distorted priorities regarding health and quality of life in a televised advertisement in Mexico in early 1980s in which imported air fresheners where promoted as a remedy to open sewage. Similar advertising was observed in China in 1997. However, in 1999 the CSD decided that 'all countries' had to pursue sustainable consumption, prompting strong objections from the G-77/China group of developing countries, especially to calls from Norway and Switzerland that the 'unsustainable patterns of consumption by the richer segments in all countries' needed addressing (IISD, 1999, p.9).

With expectations to pursue high consumption lifestyles steadily increasing within both industrialised and developing countries, two examples demonstrate the 'hidden costs' involved. Despite considerable policy effort by governments in industrialised countries, including Norway, excessive consumption of tobacco and food is escalating the cost of repairing human health. Continuing high tobacco use by girls and lower income earners indicate a deliberate rejection of 'anti-smoking' messages. In Australia, smoking-related lung cancer is expected to soon overtake breast cancer as the main cause of premature death among women (*ABC TV News,* 16 May 2001). The over-consumption of food is a prime cause for many people in industrialised countries to be overweight and nutritionally deprived, often adding to poverty pressures as medical treatment costs rise.

In the country with the highest levels of food consumption, the USA, the average weight of people has risen by nine kilograms since the 1960s, with the number of obese people trebling. According to the WHO, one third of all white American adults are now 'medically obese' (weight relative to height) and at present rates of annual increase, all adults will be obese by 2234. In most OECD countries the average adult is increasing their weight by one gram every day and already teenagers in the UK are 25 per cent fatter than their peers were in the early 1980s (*The Independent*, 17 September 1997). In 2000 the 'obesity epidemic' was reported to have reached Norway with the average 40 year male being nine kilograms heavier than in 1960s (*Norway Daily*, 13 January 2000) and Australians are now a close second to Americans in obesity levels with 19 per cent of adults now obese (*ABC News,* 17 July 2001). The cause is not simply lifestyles of less exercise but a dramatic increase in the

frequency and volume of high fat and high sugar content food. Such processed foods are generally the cheapest and their 'bulk' marketed as 'value for money'.

The US-originated 'all-you-can-eat' restaurants and the promotion of 'fat-is-beautiful' as a new social norm (particularly among poorer and urban black communities) has spread worldwide in recent years. Such advertising is worrying health experts worldwide and they regularly warn that industry and governments will have to carry the costs of an increasingly unhealthy workforce. Lost productivity from heart conditions, arthritis, back trouble and some cancers are all directly linked to eating patterns. Australian demand for drugs to treat these conditions and to reduce cholesterol, depression and smoking caused a $770m blow out in government pharmaceutical subsidies in 2000 (*Mercury*, 30 May 2001). If human health alone is an indicator of 'informed choice' then the sustainable consumption message appears to be failing in industrialised countries.

One argument for a science-technological solution to meeting the demand for food is genetic engineering and the use of GMOs. Although often argued as an answer to food security in developing countries, communications from biotechnology investors emphasise that GMOs will also reduce food prices for consumers in industrialised countries. However, there is another trend on the demand side that undermines this supply side approach to food production and consumption. Despite continuous success in reducing waste along the supply chain from 'paddock to kitchen', the end consumer is wasting more food. The US Department of Agriculture has calculated that the end consumer is responsible for 20 per cent of all fresh food purchased and prepared for eating being discarded. The percentage of 'un-consumed food' in households and restaurants is rising in every industrialised country (*NRK Oslo TV News*, 14 July 1997). When this trend is matched with 'over-consumption' of food (as clearly reflected in accelerating obesity levels), then the rationale for increasing food supplies in industrialised countries is questionable.

3.3 The current Demand Side in Norway

In 1998, the Norwegian Parliamentary Committee on Energy and Environment called for higher taxes on energy, particularly to reverse household demand. At projected consumption rates, an estimated 35 per cent increase in energy supply would be needed to meet demand by 2020 (*Norway Now*, 14 July 1998). Additionally, Statistics Norway concluded that supply-side policies appear to have failed, with the country's energy-intensive industries not making the same technological and efficiency improvements that all other OECD countries

had. One key reason has been easy access to cheap hydropower and the political influence of power-intensive industries (*Norway Now,* 9 March 1998).

Recent Norwegian politics has seen one of the few cases of a national government losing office over environmental issues. In 2000 the minority centre-right Bondevik government fell after a vote in parliament concerning gas-fired power plants. The government had attempted to further shift the Norwegian tax system from labour onto environmental damaging activities and fund incentives for a faster transition to renewable energy. In doing so it also blocked the construction of any more fossil fuel plants which would have increased Norway's CO2 emissions. The Bondevik's government's priority in addressing sustainability may have been fuelled by an embarrassing international report issued in 1998 that named Norway as 'the world's most environmentally damaging nation'. On a per capita basis, the *Living Planet Report* by the World Wide Fund for Nature, the New Economics Foundation and the World Conservation Monitoring Centre, reported that 'Norwegians, who pride themselves on their green attitudes, are the most environmental destructive people on Earth...(they) place four times as much pressure on the environment as the average global citizen and 50 percent more than Americans and Australians' (*Age,* 3 October 1998). Not that Australians can take any comfort from this. Under the headline 'Aussies greedy, not greenies', the same report was used to note that Australia was ranked ninth in terms of consumption of natural resources and carbon dioxide emissions, while the USA ranked sixth, Denmark fifth and the UK 41st of 152 countries measured (*Herald Sun,* 2 October 1998).

With disposable incomes increasing during the 1990s, Norwegians have become a contradiction to the view of sustainable development that holds that individual environmental responsibility follows increased economic well being. After decades of commitment to addressing international poverty, the trend among Norwegians to show less concern has alarmed the country's recent Prime Ministers. Kjell Magne Bondevik formed a Values Commission in 1997 with the view that a 'society based on solidarity and humanitarian principles is dependent on people who show compassion for each other, who care for the most disadvantaged and who take responsibility for others, for the environment and for future generations' (Bondevik, 1997). A daily newspaper supporting Bondevik editorialised that Norwegians 'pollute more, produce more garbage and use more energy than before. Despite lofty intentions, we have reached none of our most important goals' (*Norway Daily,* 3 April 1998). In 2000, Bondevik's successor, Jens Stoltenberg, considered that public debate about poverty had rapidly declined compared to 30 years ago: 'This is a very scary development...we get increasingly complacent'. He sees the divide between 'national egoism and international solidarity' as the main political issue today (Eggen, 2000,

p.30). Stolenberg's and Bondevik's main political rival, the far right's Carl I Hagen has consistently advocated less foreign aid, reduced taxes and cheaper food. Interestingly, Hagen also rejects Norway's ban on GMO food because 'USA consumers trusted it' and prohibition was a likely 'cover for subsidising conventional farming' with its high labour costs (Morland, 1999).

Since the Earth Summit in 1992, both production and consumption in Norway have increased by 18.5 per cent. A family of four's annual consumption in 1997 was about A$20,000 more than in 1993, after adjusting for inflation (*Norway Now,* 11 February 1998). A Norwegian researcher, John Hille, has analysed data on the changes in private consumption per capita in Norway between 1958 and 1994, showing that it grew by nearly 300 per cent and has averaged 4 per cent annually since (Hille, 1995a, p.168). Meat consumption grew by 40 per cent between 1958 and 1975, then plateaued to rise since 1989 by an average of 3 per cent annually (p.432). On these trends, Norwegians will consume between 50-100 per cent more meat and fish by 2025, which is clearly an unsustainable pattern for any country to follow (p.377).

However, Norwegian wealth has seen only a mixed improvement in quality of life. The UNDP has measured life expectancy and access to public health and education, and has given the highest ratings of human development to Norway, just ahead of Australia and Canada (*Sunday Mail,* 8 July 2001) and up from third position in 1998 (*Reuters,* 9 September 1998). Yet, despite consistent marketing messages that material goods buy happiness, Norwegians rank possessions only fifth as a 'happiness' measure (Saetrang, 1995, p.171). In a pattern similar to all industrialised countries, Norway is seeing increasing obesity, depression and drug abuse with divorces, suicides, violence and crime tripling since the 1960s (*Norway Daily,* 23 February 2000). Other trends in private consumption that could be considered to be contrary to both the pursuit of human needs and sustainability, include:

- A Marketing and Media Institute (MMI) Opinion poll showing only half of youth surveyed felt fare evasion on public transport was 'wrong' compared with 95 percent of 60 year olds. MMI added that, with moral attitudes likely to be retained for life, this new acceptance by youth of stealing and cheating indicated that 'egoism was increasing as a result of too strong a focus on consumption and the value of money' (*Norway Now,* April, 1996).
- The same poll indicated Norwegians, although consuming more electricity per capita than other people, would 'fume over the prospect of having to cut consumption'.

- According to a Gallup poll, only 22 per cent of young Norwegians think their country spends too little on foreign aid (*Norway Daily,* 13 September 1999) although foreign aid has fallen from a high of 1.5 per cent of GDP in 1993.
- Despite the lowest tax level of the Scandinavian countries, Norway saw the greatest increase in income disparity during the 1990s, with a faster growing gap than in USA and second only to Italy in a survey of 13 OECD countries (*Norway Daily,* 23 June 1999). A rare general strike occurred in Norway in 2000 against 'market forces' based 50-100 per cent pay increases for corporate executives, prompting one newspaper to describe the strike as more of a 'symptom of a culture of greed than a protest against it' (*Norway Daily,* 3 May 2000).
- Norwegian women now spend A$2m every day on shampoo, perfume and make-up; a larger amount than other Europeans and representing a 10 per cent annual increase (*Norway Daily,* 11 November 1999), and
- As a warning to its 'top human development' status, the World Health Organisation reported that Norway will record the lowest increase in life expectancy between now and 2025 due mainly to higher consumption by young women of unhealthy food and smoking (*Norway Now,* 20 May 1998).

In such a context of trends, the fall of the Bondevik government and its sustainable consumption agenda is not surprising: 'There are few signs that the radical changes needed to turn such visions into reality have yet been adopted as goals by governments or industry. For governments it would be politically difficult, for industries positively suicidal, to promote lower consumption as away forward' (Panos, 1997, p.18). While this may be a very pessimistic outlook for responsible leadership in industrialised countries, the Environment Ministries in the Scandinavian countries have acknowledged the concept of 'ecological-space' (equitable access to global resources) as a way to operationalise and communicate sustainability principles. The implications of this 'eco-sufficiency' approach will be considered in chapter six, although it needs to be said that the concept is resisted strongly by industry, especially in English-speaking countries (Falkham, 1996a, p.2).

3.4 Current focus and expected outcomes of tools

For more than a decade there has been a widespread belief that consumers will increasingly act in an environmentally responsible way. Many marketeers, Australians among them, envisaged a society questioning the 'greedy behaviour' of the 1980s and earlier. Values

would shift towards 'a desire for less, but better quality over quantity' (McKinna, 1990). Cattanach *et al.*, anticipated that environmentally conscious marketing claims 'will be as ordinary (and no less important) than claims about price, performance and convenience' within 10 to 20 years (1995, p.73). Yet, while there has been some realisation of this expectation, widely divergent views exist on the extent of progress.

In 1994 the OECD believed that a 'sea change' had occurred in the willingness of industrialised countries to confront the challenge of changing consumption patterns 'head on': 'The decoupling of economic growth from energy demand in certain countries, the continuing move to virtually closed-cycle industrial processes, and growing consumer support for recycling and eco-labelling are some of the sources of a new-found optimism' (Long, 1994, p.159). However, in a 1996 report, the CSD found that there was 'anecdotal evidence which supports the hypothesis that there is a potential demand for green products (even those that include a price premium) but that this potential demand is still small' (CSD, 1996a, p.6). Then in 1997, the Danish Environmental Protection Agency concluded that years of support for the development of cleaner technologies have not created sufficient consumer demand for environmentally responsible products, with the result that fewer such products were now entering the market (DEPA, 1997, p.1).

So what is the real situation regarding market uptake of environmentally sound goods and services?

In the Nordic countries, there is widespread recognition in the business community of the marketing value of a product's environmental aspects (Niva *et al.*, 1997, p.1). Communicating improved environmental performance has now become a marketing tool to actively inform and educate consumers. The anticipated consumer demand then drives producers to design, develop and market more products with environmental features. The WBCSD believes consumers are now rating products on an 'ecological scale' and that environmental attributes have become a mainstream expectation of overall quality, performance and price: 'Growing environmental consciousness among consumers is likely to shift the balance in favour of green marketing. Consumers know that they share responsibility for a clean environment' (*International Herald Tribune*, 23 June 1997).

However, contradictions exist in the apparent 'successes' in changing consumer behaviour in industrialised countries. Even something as relatively straightforward as recycling is problematic. This example reveals the complex interrelationships between supply and demand. It has been suggested that waste reduction was the initial driver for the green

consumer wave, especially in the USA, as consumers can readily see the impact of actions in terms of household bins and landfills (Enger, 1996, p.10). However, in the UK where recycled newsprint commands a good price and there are good facilities, still only one quarter of its newsprint was saved for recycling in 1995 (Rensvik, 1996, p.22). Australians in 1996 produced over 150kg more rubbish per person than the OECD average and only recycled half of their newspapers (*The Australian*, 28 June 1996).

Norway only began building its first paper recycling plant in 1998 when an increasing volume of paper waste threatened to overtake the savings of recycling and undermine public confidence in recycling (*Norway Now,* 28 February 1998). The author witnessed a public protest by residents in outer Oslo who were promised a decade earlier that the need for landfill would decline. Despite incineration of waste for home heating, growth in both the city's population and the volume of waste per citizen rose. Surprisingly, Norway's first comprehensive plastics recycling scheme was only introduced in 1997, heavily promoted through an advertising campaign featuring a A$100,000 lottery for a 'lucky' returned milk carton. But very few consumers appeared to have changed their behaviour after twelve months, even with increasing landfill taxes acting as a disincentive.

The recycling efforts in most industrialised countries, including Australia, are under their target despite many years of promotion. A crisis approaches as the price paid for recycled materials is declining as volume outpaces the demand from producers, due in part to a lack of market demand for products made from recycled material. The supply 'push' is happening but the 'loop' remains broken due to poor demand 'pull'. Marketing goods as 'recyclable' is the longest established form of environmental labelling and reflects the standard 'end-of-pipe' approach taken in the 1970s and 80s.

What has happened to make consumers ignore 'green marketing' messages'? The sudden rush in the late 1980s of such marketing was not necessarily of quality and has since been severely criticised, especially for its focus on selling and public relations. 'Much of what passed for environmental marketing in the initial stages had very little to do with marketing, and even less to do with the environment' (Peattie, 1995, p.25). Some also argue that the impact of consumer influence on the market advocated in publications such, as *The Green Consumer Guide* (Elkington and Hailes, 1988) is not easily achieved.

For companies, eco-labels offer a form of advertising for products with 'positive' environmental attributes and 'should give you a market edge provided you are able to communicate the benefits to the market' (Cattanach *et al.,* 1995, p.108). According to the

OECD, governments should also help communicate information to consumers, particularly about life-cycle of products, how prices reflect internalisation of costs and why 'perverse subsidies' have to be removed (1994, p.3).

Yet expectations of eco-labelling are very mixed and even the EU expects its eco-label to only gain a market share of 5-30 per cent (Jonsson, 1997, p.3). The Australian and New Zealand Environment and Conservation Council (ANZECC) states that the objective of eco-labels is to 'assist consumers, both organisational and individuals, to make environmentally responsible choices, by informing them of the environmental impacts of products and providing a standardised means of comparing products' (1999, p.37). But Australian consumers can only access 'energy-rating' labels and ANZEEC did not call for a second attempt to introduce a comprehensive national scheme after the country's unsuccessful trialing of one in 1991-93. Instead it quoted OECD findings that such schemes 'are more successful in countries which have high environmental awareness, example Sweden' (p.37). This comment could suggest that Australians are either not as competent as Swedes or that attention to other social instruments in Australia in recent years, such as environmental education, have failed. The cited OECD report identified NGOs and the media as playing crucial roles in building consumer awareness (1997, p.6).

As with other community educational efforts, such as health, fitness and drugs abuse, implicit in environmental education is the assumption that knowledge and changed attitudes will lead to behaviour change (McKenzie-Mohr, 1996, p.2). But all tools, including labelling, require other elements to work. The interaction between eco-labelling and other policy instruments, such as the internalisation of environmental costs in prices, 'can contribute to rapid changes' as demonstrated by the Nordic market's acceptance of chlorine-free paper (MoE-Sweden, 1995, p.61).

In 1990, at a main preparation conference held in Bergan, Norway, for the Rio Earth Summit, it was emphasised that a well-informed and well-educated society needed schemes 'for informing the consumer of the environmental qualities and of the risks of industrial products from "cradle to grave". Such schemes could include environmental labelling, logos, and product declarations based on up-to-date and improved methods of analysis' (MoE-Norway, 1990, p.19).

When it comes to food, consumers, in order to make informed choices, will need access to relevant information about price, contents, quality, date of production and even plant and animal breeding methods. Eco-labelling concerns both food safety and ethics, as properties

of food affect health (such as allergies). Thus, verification schemes are necessary: 'Both compulsory and voluntary labelling must be clear and unambiguous and must not mislead the consumer. The information should be verifiable' (MoA-Sweden, 2000, p.15).

Despite these expectations, eco-labelling, especially of food, remains a contentious issue in international trade debates. It is seen as a tool for protectionism, because national agencies of governments are often the third party verifiers. Different countries can therefore select different product categories and levels of what is to be regarded as 'environmentally harmful'. WTO regulations cannot yet apply to enforce 'harmonisation' as the schemes are based on voluntary decisions of producers. But this situation has not stopped continuous lobbying against the EU scheme, particularly by the USA, on the grounds that it is threat to trade, innovation and 'truth in environmental marketing' (Jonsson, 1997, p.6).

The attempts at 'harmonisation' have not resolved consumer confusion within Europe either. Consumer agencies in Sweden and Germany have expressed concern that replacing national schemes with a 'weaker' compromised EU label would result in eco-labels 'having a low value as a marketing tool'. It reflects the 'general problem of harmonisation in a situation where large differences exist in environmental conditions and consumer preferences' (Jonsson, 1997, p.13). As with the marketing tactic of competing on price, eco-labelling is expected to adopt a 'lowest common denominator' strategy.

While some developing countries argue that compiling with internationally harmonised schemes could increase the cost of products, the UN believes that large mature companies operating in these countries may not have a case: 'Firms that do not need to compete primarily in terms of price should not need the protection of governmental or international agencies to compete in terms of quality' (CSD, 1996a, p7). The International Standardisations Organisation (ISO) continues to develop guidelines to overcome the 'trade restrictions' implications of multiple eco-labelling programs. The Nordic countries generally believe that the principle of continuous improvement is at risk and that 'laggards' in some industry sectors, in some countries, will be protected. But the case for harmonisation cannot be dismissed easily, as within the Nordic countries themselves there is a 'smorgasbord' of eco-labels that confuse consumers, as will be discussed later.

3.5 Actual results of tools

Are environmental marketing and eco-labelling making consumers positively respond to environmentally responsible products and services? The experience of the failed *Environmental Choice Australia* labelling scheme (1991-93) suggests a low profile and success rate for information tools (O'Neill, 1996, p.45). The scheme was primarily intended to be a counter to misleading marketing, applying a limited code of marketing ethics and a fee to use a logo after the product was tested by the companies themselves. There was no independent verification process and no life cycle criteria applied in approving products. Attempts immediately afterwards by Standards Australia to introduce an improved scheme found continuing industry resistance. The situation is that despite the absence of life cycle assessment standards today, grocery manufacturers can still make environmental claims on their products (Mack, 1996, p.44). But is the Australian situation basically similar in other industrialised countries?

Advertising, marketing and the first round of eco-labelling have had to overcome cynical reaction to 'green gloss' among many consumers. A sense of having being 'anaesthetised' by green product claims and eco-label programs led to a 'green backlash' in industrialised countries in mid-1980s, according to Wasik (1996, p.9). The sudden and massive growth in green products reduced the effectiveness of green marketing campaigns. While individual corporations have internal performance targets to improved eco-efficiency, it is difficult to determine when and if innovative products achieve market share, as data relating to market performance of product lines are not disclosed for commercial reasons.

Considerable gaps exist between (usually) unspecified policy goals and the actual market results. In part this is because verification of the environmental attributes of a claimed 'environmentally improved' product is very difficult. Despite increasing use of eco-labels, both national schemes and in-house types, there are still not clear labelling criteria available for such an assessment. There has also been a sharp decline in the introduction of green products to the market in recent years.

Discovering where and how marketing is changing consumption patterns is difficult. Marketing's response to new issues of sustainability is characterised by contradiction of message and negative reinforcement of old practices and mindsets in the strategies adopted by business and governments. These factors undermine efforts to improve consumer capacity to change patterns. The transport sector highlights the issue. Automobile advertising has been identified as significant in the move towards larger-engined, heavier, four-wheel-

drive vehicles, and the promotion of speed has re-emerged despite road safety concerns. This trend, critics suggest, undermines the fuel efficiency of new cars as they are driven far faster than optimal economy speeds. Thus: 'The current emphasis of motor industry advertising is taking us in the opposite direction to environmental sustainability' (*The Times*, 19 September 1997).

A Swedish study in 1997 showed that of four different manufactured product groups, only one, detergents, has resulted in substantial consumer demand for environmentally improved products (Heiskanen *et al.,* 1998, p.37). One possible reason is that eco-labelling is now widespread among detergent products and in Sweden nearly all products carry them (p.40). The study concluded that the perceived role and importance of eco-labels varies between product groups and countries.

Eco-labels are themselves an interesting case of contradictions as they appear to have high recognition levels but much lower levels of actual use in consumer decision making. The Nordic 'White Swan' has been generally successful, though the European Union 'e-flower' scheme is 'virtually unknown to consumers' (Breck, 1997, p.2). Since a Danish campaign to promote the 'e-flower', recognition in that country has increased from 4 to 16 per cent (DEPA, 2001). The *Nordic Swan* was established in 1989 through the Nordic Council to operate in Finland, Sweden, Iceland and Norway, while Denmark, then the only Nordic member of the EU, waited patiently for the introduction of the EU's own label. The Swan was the first multinational and independently verified eco-labelling scheme in the world. In 1997 the Danish government also joined the *Nordic Swan* as the EU label had many problems establishing its criteria and had covered only 10 products while the *Nordic Swan* covered 1000, both excluding food.

But how effective is eco-labelling in increasing consumer demand for environmentally performing products and services? This is generally difficult to answer, as distinguishing the effects of labelling schemes from other measures and policy tools is not easy (this is reportedly a main cause of the failure to fully evaluate the fluctuating successes of the German labelling scheme, *Blue Angel;* Backman *et al.,* 1995, p.471). The situation has led to eco-labelling being criticised as 'at worst, nothing more than a marketing gimmick, and at best a means of bringing about minor changes in the market while not seriously influencing global environmental problems' (Breck, 1997, p.3-4). Its problems are exemplified by the situation in the world's largest consumer market, the USA, where competition between two private, non-profit organisations (*Green Seal* and *Green Cross*) resulted in lower overall recognition than in Norway, probably because producers and consumers did not know which

one to trust (Enger, 1996, p.12). The *Green Seal* has recently become the dominant label in the US while Canada's national scheme was re-named to *Terra Choice* and privatised in 1995 due to US trade concerns (CI, 1999a, p.13).

The generally poor credibility of eco-labelling has been used by the former President of Iceland, Vigdis Finnbogadottir, to explain why 'relatively few consumers take environmental factors into account when buying products or services. After an initial wave of interest some years ago, people seem to have grown complacent' (1994, p.139). Support for this view comes from Australia, where the retail industry believes only 5 per cent of consumers purchase with environment as a key criterion (Sylvan, 1997, p.1).

Even though consumer awareness of various national eco-labelling schemes is high in Europe, label recognition can only indicate how successful an organisation has been in communicating it. The actual response depends on consumer willingness to integrate environmental information into decisions and the producer's ability to market the labelled goods (Jacobsson, 1997, p.4). Norwegian, Finnish and Swedish surveys show average mid-80 per cent awareness levels for the *Nordic Swan,* by far the highest of all schemes. Austria's eco-label has 45 per cent awareness, and where integrated into marketing, it is a contributing factor for increased sales of up to 25 per cent (p.5). Germany's *Blue Angel,* the oldest scheme in the world, is suffering from competition from other labels and its recognition is actually falling, from a peak of 70 per cent to only half of consumers. (According to Jacobsson [p.7] one cause of this decline may be that some producers consider that it no longer offers competitive advantage in the market place.) There is evidence of increased sales of existing products once eco-labels have been applied and used in marketing, but the conclusion of Swedish researchers is that it is impossible to measure the success of European eco-labels. Only the trends in manufacturer and retailer response to consumer demand for labelled products can be made accurately (Jacobsson, 1997, p.13).

The Swedish Society for Nature Conservation's *Good Environmental Choice (Bra Miljoval)* is widely used in both Sweden and Norway. While this scheme, like the *Nordic Swan,* does not cover food products, several national labelling schemes for ecological food have appeared, including *KRAV* in Sweden, *State Ecological* in Denmark and *Debio* in Norway. In addition to these official national labels, several large retailers have introduced private retail brands for ecological and biodynamic food, notably in Sweden and Switzerland (Beltz, 1996). Such a development indicates sufficiently strong consumer demand. However, the confusing proliferation of eco-labels is in itself a potential barrier to increasing demand.

The EU is looking at designing a graduated label, which would provide additional, more detailed information on a product's ecological characteristics. It is also concerned that food labelling must recognise organic standards: 'The introduction of strict labelling and quality rules will avoid the misuse of the term 'organic' and increase consumer confidence' (EC, 1996, p.6). This development responds to a marked increase in debate about growth hormones in livestock and other concerns over meat products in Europe in recent years. It also responds to the ongoing controversy over what the EU calls 'novel foods', such as those containing gene-modified organisms. In Australia, such a debate has only recently begun (*ABC Four Corners,* 1 October 2001).

The Danish EPA is confident that the promotion of environmentally friendly goods is working and consumer demand is rising. The example of the 'dramatic increase' in sales of organically produced milk shows that 'markets can be shifted'. However, for such results to occur, 'both consumers and the retail trade need official labels to trust' such as the high levels of confidence shown in the State-controlled 'organic mark' eco-label. (DEPA, 1997, p.2). Interestingly, this is the only eco-label for food in the Nordic countries that incorporates the official government symbol; in the Danish case, a 'crown'. However, studies have shown that reading grocery labels to check environmental friendliness is not widespread in Norway, with only 14 per cent doing so often or always (Ramm, 1996, p.14). Such behaviour could be reinforced by the very small percentage - less than 3 per cent - of magazine advertisements carrying environmental arguments, a noticeable drop since 1992 (Enger, 1997, p.18).

Reports from researchers who have examined consumer food concerns are contradictory. For example, one study reveals that up to 80 per cent of the UK's population is interested to varying degrees in environmental issues. Although this level is slightly less than in 1993, it suggests a 'mature market for environmentally friendly products'. On the other hand, the proliferation of inaccurate claims has worked against green products achieving projected market share, despite human health scares and a growth in 'eco-centric' attitudes (Davies and Titterington, 1997, p.47). With organic food for example, the marketing of 'look-alike products and trickery with labelling' has caused some purchase hesitation among consumers, although demand still outstrips supply (Hopfenbeck, 1993, p.112).

Recent developments in the labelling of genetically modified food show how strong consumer interests in information can be. After prolonged debate, Australia introduced, in July 2001, a national labelling scheme to identify food products containing over one per cent GMOs. In 1997, the Norwegian government banned six GMO products which had been

approved by the EU for marketing in what was reported to be the 'largest official move against genetic modification by any European country' (*Tomorrow*, November 1997). Dairy, meat and farmed fish growers are strongly opposed to the marketing of GM food in Norway (*Norway Now*, September 1996). Providing consumer information on the criteria behind the labelling of GM foods is a worldwide issue: 'many consumers...do not feel informed of the process of assessing such foods' (Brundtland, 2001).

3.6 Limitations of the 'green consumer'

The reported decline in market introductions of green products may indicate a downturn in green consumerism. Considerable discussion is occurring on this among marketing researchers, although it is currently less noticeable within industry and government. I first examine the concept of the 'green consumer' and then examine how environmentally and socially committed consumers really are.

The phenomenon of the 'green consumer' was well researched in the late-80s and early- 90s. Attention focussed on attitudes and demographic segmentation. A 1992 survey (for example) showed that half of Australian adults were either 'dark or pale green' even though most were 'reluctant to pay more for environmentally friendly products' (Camakaris, 1992, p.29). It was widely accepted that 'green consumers tend to be affluent, well educated, and sceptical' with the later characteristic being the legacy of unsubstantiated claims in a market 'saturated with efforts to cash in on green claims' (Cattanach *et al.*, 1995, p.72).

The conventions of market research which aggregate individual beliefs, values or attitudes according to 'lifestyle' or behaviour', have been recently criticised as failing to 'capture the full range of actors, practices and interactions' influencing individual consumption (Wilhite *et al.*, 2000, p.113). More specifically, Moisander argues that green consumerism is a social and cultural phenomenon involving complex relationships that makes conventional consumer research 'very limited' (2000, p.129). He adds that as 'different people may be "green" for different reasons' it will 'change over time, taking different forms in different social contexts' (2000, p.138).

The two main techniques used in conventional marketing - segmentation and targeting - result in groups of consumers being offered different versions of products and services. Some marketers suggest this is an attempt to divide people along socio-economic lines while at the same time reinforcing uniformity within the sub groups. It is also at odds with an

ecological view that focuses more on the generic basic needs that unite the mass of consumers, such as clean air, water and food (Peattie, 1995, p.153). However, many marketing professionals fear that promoting such 'basic needs' implies conformity, reduced diversity and a reduction in individualism. This view forgets that conventional segmentation is already stereotyping individual consumers and has also treated 'green consumers' as a narrowly defined group, creating 'green' marketing strategies oriented towards a niche rather than the mainstream.

So how 'green' are consumers today? The 1996 Australian Bureau of Statistics report *Australians and the Environment*, indicated that nearly 70 per cent of Australians were concerned about at least one environmental problem, with rural residents being more concerned about the use of pesticides, land degradation and biodiversity (*The Australian*, 28 June 1996). More than two thirds of Americans consider themselves to be environmentalists and agree that 'standards cannot be too high and continuing environmental improvements must be made regardless of costs' (*International Herald Tribune*, 23 June 1997). Government and business, though, claim citizens will not carry any of the costs involved. It has also been reported that, while 61 per cent of respondents were 'sympathetic' to environmental concerns', only 6 per cent saw themselves as 'active environmentalists' and nearly 30 percent were neutral or 'unsympathetic' (*USA Today*, 2 February 1997). The question is whether people in America, the world's wealthiest industrialised country, perceive the category 'active' as involving conscious, daily consumption decisions.

If we take total development assistance as an indicator of public support for global sustainability, then the fall on average across the OECD countries from 0.25 per cent of GNP in 1996 to 0.22 percent in 1998 - the lowest on record – is of concern. While Denmark's contribution at 1.04 per cent is the highest, the USA's 0.08 per cent is the lowest - a figure far below the 0.7 per cent recommended by the UN (*Financial Times,* 17 June 1998). Although in 1998 Norway's contribution was 0.92 per cent, the Norwegian Conservative Party advocates a further reduction, arguing that free trade will be more effective. However, a Norwegian Foreign Ministry report concludes that, for the world's poorest 48 countries, the benefit from the maximum prices for their goods would not fully compensate the proposed cut (*Norway Daily*, 3 September 2001). In the 2001 elections, the Conservatives became Norway's largest party and are now in the new Bondevik government.

Several media reports in recent years suggest that Norwegians are less 'green'. Under the title 'Environment Not Pop' a survey was reported showing a marked change in attitude in

1996, with a 20 per cent drop in support for spending more public money on protecting the environment (*Norway Now*, September 1996). A survey on recycling found that the older Norwegians (55-79 age group) were more environmentally concerned than youth and young adults (under 30 age group), both in attitude and action, including buying behaviour (Strandbakken, 1995, p.18). One possible explanation is that the older generation 'had to learn to make use of scanty resources by keeping and reusing whatever they had' compared to today's favourable financial conditions (Enger, 1995, p.19). Interestingly, willingness to pay was not, as assumed, a way for Norwegian consumers to 'pay themselves out of the responsibility' to protect the environment by their own actions. Instead environmental awareness was independent of resources and dependent upon willingness to 'make some sacrifices for the environment'. Consumers carry out environmental actions for altruistic reasons as 'opposed to rational-context of understanding' and accept delay in being rewarded (Enger, 1995, p.21).

In Australia, a survey of attitude-action relationships found that formal education level and age were the best predictors of changed behaviour for environmental reasons. The most 'pro-environment' group overall was the age group 25-34 years. One third of people with a non-English-speaking background, in all age groups, reported that they had not changed their behaviour, with 43 per cent failing to further identify any aspect of their own lifestyle as damaging to the environment. Despite education and information efforts, the survey showed that 18 per cent of young respondents between 15-24 years stated that they had made no changes to behaviour, with nearly one quarter saying that they could not think of anything they did that was environmentally damaging (NSW EPA, 1994, p.17).

Thus, youth may not be as 'green' as believed by policy makers. Though little research exists, this phenomenon has been closely observed in Norway. The media in Norway have, in recent years, been overwhelmingly preoccupied with economic measures of increased consumption and growth - contrary to the message in the Brundtland Report and the sustainability policies of nearly all actors, including most political parties. During the last two national elections (1997 and 2001) media comments have generally reinforced the absence of environmental issues on the agenda of the main parties. During both elections, the majority of new youth voters, especially males, supported parties with the strongest free market policies, including the far-right (*Dagbladet*, 10 September 2001).

The existence of collective support has been identified as a key factor in encouraging consumers to adopt environmentally sound behaviour (Strandbakken, 1995, p.17). The contradictions in youth attitudes to sustainability could be explained by the messages and

signals they receive from the adult world, especially from increasing consumer spending in a buoyant economy with growth rates of 3-4 per cent. According to an 'environmentally conscious farmer', young Norwegians' greater disposable income allows them to influence society on environmental issues through consumer choices rather than seeking recourse to the previous generation's praxis of 'environmental and social activism' (Small Producer, 1997). Whilst 'the young are not as selfish as it would appear', when politicians and business leaders dominate the dialogue about environmental issues it suggests that they also 'take all the responsibility for it, so people think others will do all the work for them' (Small Producer, 1997).

The challenge to environmental marketing is how to operate in a youth culture in which such contradictory signals are occurring. Certainly today's youth seem less concerned about environmental issues than those in the 1980s. A Dutch report notes that declining youth interest in the environment is caused in part by peer group ridicule of those making conscientious choices regarding private consumption in favour of 'wallet idealism' (MoHSPE-Netherlands, 1997b, p.3). Conspicuous consumption is socially acceptable, possibly as a backlash against efforts to normalise responsible attitudes and behaviour, including not littering and joining environmental groups. It could also be a sign of resistance to parental and educational promotion of such activities. Youth are not joining the once popular environmental and third world aid groups such as Friends of the Earth and the Norwegian Nature and Youth group, because they are perceived to be all 'gloom and doom'.

A significant change in the attitude and commitment of youth has also been observed by the author in Australia. There, too, there is a declining membership of environmental organisations among youth. The situation may be related to feelings of powerlessness as consumers, but it also suggests that the role and responsibility of the consumer may have been downplayed in formal education about sustainability. For example, while many youth have greater awareness of legal rights they appear to be far less concerned about access to safe 'clean and green' food.

According to Dutch findings, youth 'want to live in an environmentally aware way, but without adjusting their lifestyle'. There is a discrepancy emerging over who should pay environmental costs. While youth are saying polluters should pay and that environmental costs should be fully reflected in prices, they also hold that individual rights 'for consumers to consume what they want' are paramount. This can be described as 'hyper-individualism' and correlates with the youth culture of materialism that is now more strongly promoted internationally than was the case in previous decades (MoHSPE-Netherlands, 1997b, p.3).

While youth may be environmentally concerned, it may be older groups who are most responsive: 'Faced with an environment that seems increasingly out of control, consumers are seeking to re-establish control through their purchasing decisions' (Peattie, 1995, p.93).

Together with the general trend of a declining youth vote in elections in industrialised countries, including Norway, the expectation that sustainable consumption patterns will be driven by the youth market may not be valid. The 'reality check' made in this section suggests that this assumption, along with the overall impact of the much heralded 'era of the green consumer', may be of limited validity.

3.7 Where are the demand side risks?

We have seen that there are contradictions in the current consumption trends in industrialised countries. Consumers are not responding to the marketing of environmentally innovative products and services to the extent expected. While industry may be adopting cleaner production strategies, consumers are only slowly, if at all, adopting the equivalent of 'leaner and smarter' consumption through their choices. It is important to consider whether this slowing, or even reversal, of demand may jeopardise overall sustainability policies. A former Norwegian Environment Minister, Thorbjorn Berntsen, warned in 1996 of the scale of the task of changing 'over-consumption'. He felt that the universal adoption of 'the growth models of rich countries' after the fall of the Berlin Wall had strengthened the 'focus on materialism in our culture', with the result that 'we are truly facing challenges and conflict-provoking changes within and between countries' (1996, p.11)

It has been noted that eco-efficiency gains in automobile manufacturing 'have been offset by growth in transport volumes and increasing demand for household electricity' (OECD, 1994, p.2). Similarly, while efficiencies in processed food supply have allowed cheaper food, the resulting over-consumption is impacting negatively on human development. Such cheap food is often the highest in salt, fat and carbohydrate, adding to the health costs of low-income families and, in turn, society (Peattie, 1995, p.287).

In supermarkets, the 'much-vaunted green consumer...is vastly outnumbered by its predatory rival, the bargain basement prowler' (Wright, 1998). Not only are consumers, especially youth, opting to stay off the 'green consumption bandwagon', but also the 'greening of corporations' may not be occurring as anticipated. One clue is that firms are not

incorporating environmental considerations into their marketing strategies (Beckmann *et al*, 1998, p. 2).

Surveys of Australian business in 2000 indicated 'perceived slow progress in the actual implementation of cleaner production in Australian industry'. One reason offered is that many companies no longer see environmental management as a priority as it does not 'represent either a significant threat or opportunity' (WASIG, 2001, p.11). There are several reasons why producers could be less inclined to invest in further eco-efficiency improvements. The slowing pace in energy savings, for example, may be due to industry assumptions that the most obvious potential savings have already been realised (Rensvik, 1996, p.21). There is also the belief that taking environmental action is a 'luxury to be indulged in during the good times' and therefore must be a low priority during any economic downturn (Wright, 1998).

Another reason for industry reluctance may be the fear that eco-efficiency 'would probably involve the disappearance of some products and firms' and such a fear can lead to 'a culture that discourages change' (OECD, 1998, p.47). 'Laggards' in industry can undermine the overall demand side, as institutional consumers are important 'market pullers'. US trade associations and corporations seeking to maintain 'business as usual' spent US $100m per month in 1997 lobbying their federal government, according to Associated Press. Such a situation raises an interesting question: 'what if that money was spent on eco-efficiency instead?' (*BATE,* April 1998). The OECD recommends that governments overcome widespread 'status quo' lobbying by opening new communication channels with stakeholders 'who represent a wider range of interests' (OECD, 1998, p.47).

Business may also be slowing down from fear of getting too far in front of consumers. Any 'environmental leadership' by business risks being stifled without further change in mindsets, according to one Norwegian CEO: 'the debate over environmental issues over the last decade has been characterised by the combination of an almost deafening concord over ultimate objectives and an almost paralysing disagreement over how to implement change, which is a dangerous combination' (Almskog, 1997). After the GLOBE 98 business conference on sustainability in Vancouver, Canada, it was reported that 'some observers worry that companies are adopting the language of sustainability without necessarily having the substance to back it up' (*BATE,* April 1998).

A key finding of the 1998 Kabelvaag Conference on Sustainable Consumption was that product innovation will never be enough on its own: 'There is clear evidence that eco-

efficient product improvements are often overwhelmed by continuing growth in overall consumption'. Addressing fundamental drivers of consumption patterns is essential, including market pressures such as pricing and advertising, policy and fiscal frameworks such as subsidies, and cultural expectations such as those dependent on fashion (MoE-Norway, 1998, p.24).

When the *Environmental Choice Australia* eco-label began its short life, the Australian Manufacturing Council view was that while 'the power of consumers to affect firms' decisions through the market cannot be underestimated...to date the "green consumer" impact on markets has been somewhat uneven and unpredictable in its manifestations'. It went on to add that 'it is likely that consumer choice will fluctuate as a driver of sustainable development, for a number of reasons:

- Consumer choice is primarily determined by price and quality;
- The assessment of the 'environmental' qualities of one product versus another is a field which is yet in its infancy; and
- Most consumers have a relatively limited 'search' process before buying any product' (AMC, 1992, p.32).

The OECD has confirmed such caution as its suggests that education and information measures to change consumption patterns to date have 'brought about some changes in consumer behaviour, however, these have been limited to changes which do not impose costs on the consumer or result in reduced convenience' (OECD, 1997a, p.1). The attitude-action gap in consumer behaviour is a result of consumers seeking to maximise their individual utility and follows the dictates of 'self-interested rationality'. By contrast, protecting the environment or social values is about maximising the longer-term collective utility and is therefore a 'collective rationality' (Niva *et al*, 1997, p.5). This may be why Berntsen warned of the difficulties involved in changing unsustainable consumption. According to an OECD report, the 'environmental impact of consumption issues remains largely invisible to consumers' and considerable work is required to supply information 'to help them make informed decisions about what they consume'. Traditional policy aimed at awareness raising and modest financial incentives 'have had limited success' in changing consumer behaviour and more attention needs to be given to infrastructure and supporting networks (OECD, 1994, p.2).

What then is the state of industry's commitment to build consumer demand for environmentally improved products and services? The low level of environmental

information present in advertising could suggest that producers believe that environmental arguments will not sell products (Enger, 1997, p.19). A WBCSD Corporate Innovation survey of companies showed only 15 per cent belief that environmental and social factors are a key selling point. This was despite 83 per cent reporting that sustainable development was explicit in published 'mission statements' and that 55 per cent ensured staff took sustainability into account during innovation process (WBCSD, 2000b, p.36-37). A survey of business managers in four European countries, including Norway, indicated that marketing was the potential 'weakest link'. It was the functional area that had the lowest environmental activities (Belz and Strannegaard, 1997, p.157).

A more detailed survey of Norwegian business managers showed only 5 per cent agreement that market mechanisms alone will solve what 94 per cent considered 'very serious environmental problems' (Wolff, 1995, p.46). Over 35 per cent believed that environmental problems can only be solved through a 'structural change of society' (1995, p.22). Nevertheless, 27 per cent used eco-labelling and 38 per cent regularly developed 'green products'. In Norway only 30 per cent used environmental arguments in marketing, substantially lower than in Sweden and Finland (1995, p31). When asked whether consumers are ready to pay a 10-20 per cent premium for environmentally sound products, 80 per cent disagreed.

We have seen that 'green marketing' is still carrying the legacy of adverse and cynical reaction by consumers to shallow and exaggerated claims. There exists a significant percentage of 'once bitten, twice shy' consumers who are likely to remain sceptical of new innovations and information from producers for some time. The rate of business understanding of the need to change production patterns may be faster than the acceptance rate in consumers of their own responsibilities. The risk would then be that environmentally responsible businesses could experience a poor market demand for their new products and services. Who can blame them if they also become 'twice shy'? Progress may falter at the starting block because mainstream consumers are reluctant to accept the notion of the 'consumer pays' principle.

Thus, the situation facing the demand side of sustainability appears to be characterised by a critical mass of 'uncertainties' around such pivotal matters as:

- Consumers' needs, perceptions of value, expectations, trust and attitudes;

- Government and industry policies and infrastructure, standards, innovations and pricing; and
- Information and its access, ownership, supply, quality and use along the product chain.

These and other factors will be examined in order to ascertain where the main barriers are.

3.8 In practice, what explains the gaps in tools' performance?

This section will explore the influences which come into play with individual consumer choice. The interaction of factors at both the level of the individual (internal) and society (external) determines behaviour. The Norwegian situation exhibits contrary trends in progress towards changing consumption patterns. While supply side changes, such as eco-efficiency, are helping to produce more environmentally responsible goods, the demand side is relatively slow. According to a leader in one Norwegian environmental NGO 'the easier actions are being taken by all actors'. People take environmental considerations into account when shopping and practicing household waste separation, but are reluctant to show 'the willingness to make harder levels of commitment', such as reducing energy consumption. The main reason suggested is that 'while individuals head in the right direction on smaller things, society as a whole is going in the wrong direction on more difficult challenges'. Indicators for this include: increasing levels of overall energy consumption; increasing total volume of waste, despite increased recycling efforts; and an expectation of continuing 2-3 per cent annual growth in consumption at all levels of society. (ENGO, 1997).

An evaluation of the information and education approach to changing individual consumption in The Netherlands showed that only the 'easy behavioural changes' had occurred; 'that is those which avoid significant costs to the consumer in terms of finance, convenience or status' (OECD, 1997a, p.2). To understand, therefore, why consumers are reluctant to make further change requires clarification of several relationships, including those between: supply and demand; consumer behaviour and informed choice; marketing and labelling; attitudes and actions; and between various consumer preference factors, such as perception of product value as defined by psychological needs, image, status and convenience.

Information tools themselves cannot operate effectively without consideration of all factors influencing consumer decision-making and these include: economic rationality (price

sensitivity); personal characteristics (age, lifestyle, gender, convenience); social (culture, norms, values); and psychological characteristics (perceptions, attitudes and knowledge).

3.9 Internal factors

a) Individual perceptions of overall value

Pantzar reminds us that conventional economics and sociology assume that 'stable and durable mental states of the consumer' are reached when lifestyles are formed (1995, p.109). Consumers either make choices based on perceptions (subject to price and income constraints) or on role expectations and social norms. Rational choice, passion and fashion are all relevant when trying to change habits and introduce new products, but 'fashion and passion' are clearly less stable. When products fail to succeed it becomes increasingly important to examine sociological 'reasoning' and structural elements (1995, p.109). The role of information in changing behaviour and the extent to which consumers will pay internalised costs are two key factors.

Psychological variables influence the buying of organic foods, for example, with the consumer being motivated by personal and societal factors beyond economic utility considerations because the price is higher for these products. The variables include value orientations, environmental and nutritional consciousness, perceived product attributes and food-related attitudes (Grunert, 1993b, p.140).

b) Price barrier

Price is possibly the most critical barrier encountered by marketing and eco-labelling. Consumer behaviour theories emphasise that price influences perceptions of value, convenience and other attributes of products. Yet, while internalising environmental costs in prices is recognised as essential for sustainability, little progress in this area seems to have occurred.

Although it is difficult to take self-reported statements of attitudes as indicators of actual behaviour, more than 70 per cent of Norwegian consumers indicated a willingness to pay five per cent more for food produced in an environmentally sound manner. However, when the additional price was increased through various incremental steps, the decline in willingness to pay was dramatic. Less than 10 per cent would accept a 25 per cent premium

(Wandel and Bugge, 1996, p.23). Another factor could be that consumers who daily choose products such as food on the basis of low price often perceive any quality difference between products as being of little importance (Niva *et al.*, 1997, p.5).

Price also intervenes between a consumer's motivation and behaviour. 'Perceived personal costs' moderate the relationship between 'moral-based attitudes' and the final decision (Thogersen and Andersen, 1996, p.188).

c) Convenience

In daily purchases consumers often do not consider alternatives and instead use simplifying heuristics. Previously tested and satisfying products become routinely chosen for reasons that could result from complicated 'trial-and-error' processes (Niva and Timonen, 1999, p.6). 'Although cost is often discussed as the main barrier to green consumption, convenience may be a more important influence' (Peattie, 1995, p.92). Changes to working patterns and one-parent families increase the need for convenience in household management. Mothers of young children, one of the groups most concerned about the environment, give priority to meeting 'demands' of their children. Peattie believes that 'if consumers can be presented with a form of green consumer behaviour which is also convenient, the potential for a positive response is considerable' (1995, p.93).

d) Bias against ecological goods and services

Often dissatisfaction with green products could be due to an expectation that they 'will work less well' because trade offs with other characteristics are likely to be involved. The failure of eco-efficient products to perform 'will prejudice consumers against green products' (Peattie, 1995, p.90).

e) Distrust of claims

Trivial, misleading or false claims have been described as 'green washing' and include suspicion and confusion over common but ambiguous terms such as 'environmentally friendly' (Enger, 1997, p.20). There are also hundreds of contradictory information sources requiring the individual consumer to filter messages by evaluating each one and its source. 'If either are judged to be untrustworthy, the message is likely to be discounted' (OECD, 1996a, p.21).

Advertising industry surveys in USA show 80 per cent of consumers are wary of marketing claims (Wasik, 1996, p.6). 'Weariness' and consumer confusion over claims is a main reason for the sharp decline in green product introductions on the market in recent years. Wasik quotes a US EPA report into the discrepancy between consumer attitudes and behaviour: 'recent and rapid proliferation of marketing terms, combined with lack of standardised definitions, may be exacerbating consumer confusion and scepticism'. The most significant factor was price, but the lack of trust in the 'sincerity' of environmental claims was also a critical factor (1996, p.6).

Contradictory signals can also undermine consumer trust. Although some businesses are improving production processes and offering better products, the overall demand situation is disappointing: 'The steadily increasing amount of packaging, the increasing spread of harmful substances via products and the constant drive for more consumption gives a rather negative impression of producers as agents for influencing consumers positively and constructively' (Rensvik, 1996, p.15). The drive for increased 'corporate social responsibility' is related to this perception.

f) Consumer ability to make 'informed choices'

A Danish conclusion is that a lack of consumer knowledge of what exactly an 'environmentally friendly' product is and what the environmental impacts are of one product compared to another, is constraining both the supply and demand sides (DEPA, 1997, p.2). Knowledge levels are important because market-driven policies rely on consumers' sophistication in environmental matters and their ability to make use of environmental information in decision-making (Niva *et al.*, 1997, p.1). Though eco-labelling schemes are generally based on life cycle assessment of the impact of various products, there can be difficulty in understanding the criteria used. The lack of appropriate information about the environmental attributes of a product may be the biggest reason why about 65 per cent of Swedish and Finnish consumers fail to purchase environmentally sound products (p.6). This is of particular interest because these countries are among the most advanced on eco-labelling (through *Nordic Swan*), leading to the conclusion that 'consumers do not seem to be ready to change their behaviour for the good of the environment – at least when it requires effort. One reason for this appears to be lack of knowledge and understanding of environmental problems' (Niva and Timonen, 1999, p.5). With food in particular, environmental information must compete with primary 'decision rules' by consumers. When making common repeat purchases consumers often apply simple choice process to ensure 'effortless decision making' (Niva *et al.*, 1997, p.5).

g) Attitudes to responsibilities

All the above factors are related to one over-riding obstacle: the significance of the gap between attitudes and the actual behaviour of consumers. Understated perceptions of personal responsibility for the consequences of consumption choices are also a factor. Many individuals pass their responsibility for environmental behaviour onto governments and industry, as they are reluctant to reduce their own levels of consumption (Welford and Prescott, 1996, p.364).

Norwegian consumer attitudes towards the environment are moving away from accepting personal responsibility, according to findings from SIFO. Those who are willing to give up goods and services to reduce environmental damage have declined from 74 per cent in 1995 to 59 per cent in 1997. However, support for the choice to be made by others, notably government, has also fallen from 77 per cent to 67 per cent (*Norway Now*, December 1997). The question, then, is, whom do consumers believe is responsible? The same survey indicated that the only area where relative stability is occurring is in acceptance of the costs of behaviour. Norwegians' acceptance of 'green taxes' on products and services is down only slightly to 54 per cent. This could suggest that people are prepared for governments to recover some of the costs of environmental damage, indirectly.

The situation is, however, quite different elsewhere. Half of those surveyed in the USA did not purchase green products because they saw it as the responsibility of companies to solve problems. Consumers saw themselves, by contrast, as 'too busy to make lifestyle changes to help protect the environment' (Peattie, 1995, p.92). According to Peattie, the 'discrepancy between reported willingness to pay extra for green products and actual sales levels' can be explained by 'consumers wishing to appear socially responsible' (1995, p.285). This raises again the critical issue of whether consumers are following 'rational' decision-making processes.

A slightly different perspective is given by Schultz *et al.* They argue that the problem is the growing complexity of consumer choice: 'There is increasing evidence that customers are basing most of their purchasing decisions on what they perceive to be important or true or what they think is right or correct rather than on solid, rational, economically derived information' (Schultz *et al.*, 1996, p.22). Some researchers are now questioning conventional marketing and its reliance on the 'attitude-behaviour' models underpinning the 'rational beings' theory. They 'feel uncomfortable with the lack of realism' in the most

widely used attitude theories, theories that do not allow for 'altruistic motivations' (Thogersen and Andersen, 1996, p.183). This point reinforces the role of the wider cultural context of consumer decision-making.

3.10 External influences

a) Supply, and other opportunities to act

In addition to internal barriers to individual sustainable behaviour there are external influences that affect opportunities to act, including structural and cultural factors. Although rational economic and attitude-behaviour models tend to reject these influences, 'social marketing' theories do address them (McKenzie-Mohr, 1995, p.3).

Inadequate access to supplies is an obvious barrier encountered by consumers with a willingness to change to environmentally responsible products, especially organic food. However, even though demand may exceed supply, maintaining quality is important: 'In the case of ecological food, any sudden shortage could cause sub-quality products to be released onto the market with a negative response by consumers' (DEPA, 1997, p.3).

Other factors affecting the supply side include the capacity of business to design innovative products and to develop environmental marketing and eco-labelling strategies. The attitudes, perceptions and actions of producers can delay supplies of eco-efficient products in a number of ways, including barriers associated with organisational culture, processes and policy priorities, and budget commitments. These internal barriers within organisations can add up to a 'green wall', which will need to be explored further in order to determine constraints on the performance of marketing.

The lack of product alternatives still applies to most areas of consumption in Norway. Despite a number of product groups carrying the *Nordic Swan* and *Debio* labels, supply, to date, is limited (Vitterso and Strandbakken, 1997, p.3).

b) Access to information

The supply of consumer information is crucial but it has to be both motivating and enabling. An Australian study found that providing information on organic food 'without any additional clear incentive to action...was not cost-effective' (COA, nd, p.4).

The effectiveness of eco-labelling depends to a large degree on whether consumers 'perceive and believe' the information they provide (CSD, 1996a, p.9). While clearer public explanation for the different product life cycle criteria of eco-labels is needed, such information also needs to communicate '*why* tade-offs exist and *how* widespread and permanent they are' (Heiskanen *et al.*, 1995, p.38). 'User-friendly' information is essential for food products. The determinants of consumer choice change, especially items consumed daily, become increasingly 'dictated by situational factors, routines and social norms and less and less by individual motives and preferences' (Pantzar, 1995, p.108).

c) price

The 'demand-based approach' to pricing sees many companies setting prices according to demand and perceived value to consumers, regardless of actual costs (Peattie, 1995, p.287). The method of pricing itself can influence purchase decisions. If products are charged at a fixed rate, as is traditionally the case in the supply of water, for example, then consumers have no incentive to be economical (1995, p.286). This would apply also to 'all-you-can-eat' restaurants, which promote over-consumption and waste of food.

Demand and supply levels always influences price but Peattie believes that 'where expansion in demand for green products outstrips growth in supply, prices may rise' although this is not a widely observable phenomenon because most of these products 'already enter the market with a green premium' (p.283). He suggests that a number of other factors influence the level of acceptance of a 'green premium' by consumers, including:

- nature of the product and level of differentiation operating in the market
- credibility of the company as a green producer
- profile and consumer's awareness level of environmental issues related to the product
- consumer's price sensitivity, and
- perceived value of the green product over traditional alternatives.

The last point is well illustrated by organic food, for which, even though its value may be primarily its safety and taste aspects, a less attractive shelf appearance can be a problem in marketing it.

The price factor relates to other market-based and economic instruments, and other distortions can thus occur, such as tax variations on alcohol levels in beer and lead content in petrol. The use of taxes and subsidies deliver appropriate price signals in the market appears to be working in Scandinavian countries, where such incentives were introducted in the early 1990s. Taxes on carbon dioxide and sulfur dioxide emissions and on waste generally have nearly halved outputs (Panos, 1997, p. 15). These pricing policies apply at the macro economic level (the cost of natural resources commodities and inputs into products and services), at the product marketing level, and with consumer use and disposal.

Marketers suggest that consumer response to premium prices is affected by 'consumer affluence and the closely (and usually inversely) related concept of price consciousness' (Peattie, 1995, p.284). But in Norway, despite a very healthy economy, retailers are increasingly using price competition while food and beverage manufacturers are increasing the volume of products, resulting in lower unit costs. The WWF believes this is caused by perverse subsidies supporting the 'volume approach' along the product chain and providing actual disincentives for new, more efficient products entering a market 'dominated by low priced items'. This, it suggests, is a major constraint to changing consumption patterns (WWF, 1997). There is concern among Norwegian consumer organisations that only a minority of people are interested in sustainable food production while 'most people don't care, don't know and want food as cheap as possible' (Consumer Advocate, 1997).

d) Marketing

Although marketing theories recognise the importance of individual consumer capacities and knowledge levels, most texts adopt a very limited definition of the learning involved. They tend to see knowledge as having 'two components: familiarity with the product and expertise, which is the individual's ability to apply the product' (Dibb *et al.*, 1994, p.113). But there are several barriers working against innovative products succeeding on the market, and this is a real challenge for marketing departments within business. There is uncertainty over the level of understanding of basic sustainability issues that professionals in marketing and advertising may actually have. No research could be located on this matter, raising another question: how well integrated is marketing in the environmental management systems now operated by many companies?

Trends in consumption patterns may have a causal link to increasing access to and marketing of shopping as a social activity in itself. Much of Australia's recent economic growth is attributed to consumer spending. Extended shopping hours by larger retailers in recent years

is heavily advertised, often targeting youth and single-parent families. European evidence, however, questions whether mainstream consumers really desire it. In Germany, where 6pm closing for retailers has existed since the mid 1950s, the industry had to embark on an expensive advertising campaign to convince people of a 'need' to shop in time they had used for other recreational activities. In Norway, the calls from larger retail chains to extend shopping hours have been strongly opposed by trade unions, small business and religious groups.

e) Signals from government and business

Most external factors involve supply issues and the 'signals' received by individuals as both consumers and citizens. The latter often involve inconsistencies within and between policies and strategies of government and business. The different instruments of regulation, tax, subsidy and information can send out conflicting signals in the market place.

The case of Norway shows that, despite high public awareness levels of the basic issues, formal education efforts, regulations and investment in eco-efficient products and services, consumer demand for such products is not accelerating. The institutional framework itself is sending out conventional messages and, thus, contradictory signals. Much of this is fostered by the political climate for public debate. Former Environment Minister Berntsen believes that for his party to campaign on 'the goal for doubling consumption levels in Norway by the year 2030 is completely crazy. If India went for the same thing, the world would break down. We Norwegians need to realise that there is no room for increasing living standards any more...the trouble is that no matter how environmentally friendly Norwegian industry becomes and how environmentally sound our products become, any growth in the North has a negative impact on global distribution' (Hille,1995a, p.7). Berntsen's views are significant as his party, Labour, was formerly lead by Gro Brundtland.

Debate in Norway when Berntsen's government was seeking re-election in 1997 (observed by the author) revealed widespread expectations of increased consumption: youth of being able to own expensive sports cars within two years of entering the workforce and adults of being able to build large extensions to traditionally small 'summer houses', reversing decades of restrictions based on strong cultural norms. The debate also exposed considerable scepticism among environmental NGOs about government policies directed at changing consumption patterns. The 2001 election campaign was described by the Bishop of Oslo as the 'most egoistic and introverted ever' and 'Norwegian obsession with tax cuts' meant a

campaign based on 'the rich getting richer at the expense of the world's poor' (*Aftenposten,* 17 August 2001).

It has been suggested that if mainstream political messages where to be more related to the challenge to change consumption, then the 'old debate over development versus environment' would be reduced. The implication is that such tensions still exists in Norway even though there has been remarkable political consensus on the need to address environmental issues over the last decade, as has been the case in all Nordic countries (Small Producer, 1997).

Although the European Commission (EC) believes that the elements to achieve sustainability polices are in place or 'in the pipeline', there are 'doubts whether the political will to implement the strategy is still there'. Since the Rio Earth Summit, there have been 'serious question marks over whether the support for sustainable development can be translated from words to specific actions'. The EC notes that the road to sustainability 'is likely to be become more difficult' and concludes that it is 'vital that the Union sends European citizens clear signals that sustainable development is an important strategic objective' (EC, 1996, p.21).

The situation also requires government to facilitate suitable conditions for consumer actions. Although progress towards sustainable consumption patterns may be slow, at least a clearer understanding of some of the basic causes is now emerging: 'Structural reasons, such as a lack of incentives and information, are recognised as obstacles preventing individuals from changing behaviour' (Rensvik, 1996, p.9).

f) culture

Social norms help explain why, compared to Europe, consumer boycotts are 'particularly weak' in the USA (Assael, 1984, p.622). Individual travel behaviour provides a good example: 'Although culture alone may not be the greatest determinant of behaviour...investigating different cultural responses to satisfying human access needs could uncover helpful insights into changing people's travel patterns' (OECD, 1996a, p.20). For example, non-recreational cycling has been 'normal' behaviour in Scandinavian countries while in English-speaking countries it is more 'marginal or eccentric'. Within cultures, different groups can see the car as 'a symbol of the unhindered self', encouraged by advertising which builds 'new cultural constructs...(and)...links between products and needs, values and/or desires' (1996a, p.20).

And finally,

(g) quality of research

There is an imbalance of product related research in favour of supply side issues. The research agenda for consumption policies and their tools is not as comprehensive as might be expected for such a pivotal issue. Although the Norwegian government made funding of sustainable consumption research a high priority in the late 1990s, there has been little research on aspects connected to consumer change and the role of information and education. Also, despite marketing being based on the principle of helping business respond to the needs of consumers, business appears to have undertaken minimal investigation into how consumers make 'informed choices' to favour environmental products.

Nevertheless, researchers in all Nordic countries are beginning to address conventional market research failure to successfully promote innovative products and services. Some marketers have been aware of this. Peattie argues that 'perceived-value pricing involves matching the price of a product to its perceived value in the eyes of the customer', but this only works if sufficient market research about the mix of other variables that influence this value has been undertaken (1995, p.284).

Texts used in business schools in Europe and Australia show a preponderance of conventional American-based theories on consumer behaviour that either ignore the environment (for example, Usunier, 1996) or, more commonly, refer to the benefits of devising 'green' strategies for 'niche' markets. Case studies of ineffective 'green' or social marketing are often shallow and best practices appear limited and repetitive. Marketing texts tend to simplify the complexity of consumer choice with minimal critical analysis of 'green washing' or of 'un-articulated' needs of consumers. Sustainability, internalisation of environmental costs in prices, and the issue of how to reach mainstream consumers are generally ignored. The problem may be that most US marketing texts treat 'consumerism' as a 'movement' focussed on consumer protection and regulatory control over marketing. Similarly, the legacy of 'green consumerism' as a simplistic 'give-it-up' movement in the 1970s may also be prevalent in many US marketing schools.

3.11 Defining the 'informed consumer'

The WBCSD believes that: 'Consumers need clear, accurate and reliable information to make sound purchasing decisions and to provide the necessary pull from the market place' (Falkham, 1996a, p.25). However, in order to understand how consumers may change their behaviour through information, we need to define what is expected of 'informed'. In basic marketing theory, 'informed choice' should happen by searching and then processing (categorising, evaluating and organising) information (Assael, 1984, p.537). Yet with knowledge, values and ethics involved in sustainability, the entire process may be far more complex for the consumer than simple information acquisition and use. This suggests another challenge to conventional marketing and its view that consumer 'knowledge' is simply familiarity with the product and expertise to use it (Dibb *et al.*, 1994, p.113).

Behavioural studies have shown that consumers are guided by their environmental awareness in purchasing. Hofpenbeck considers that 'all forms of environmental protection which cannot be based on a corresponding awareness on the part of the consumer are destined to fail. Ecologically oriented marketing has the responsibility for opening up consumer awareness of the environment' (1993, p.180). Even the 'father' of modern marketing, the American Philip Kotlar, believes 'informed consumers' are driving the development of 'intelligent consumption' and the application of Design for the Environment (DFE), Life Cycle Assessment (LCA) and other concepts (Wasik, 1996, p.54). Ensuring a flow of information on green products is therefore vital for marketers, because 'without it, green consumers are cast adrift' (Wasik, 1996, p.94).

It is most likely that the growing consumer concern for 'higher quality' foods is due to an increased awareness about diet and health linkages, production processes and related quality characteristics. The latter includes the five major subsets of a product's attributes: safety, nutrition, value (ie. size, taste and convenience), packaging and process (such variables as pesticide use, for example). Following the theory of rational decision-making, aware consumers will purchase those products that give 'most value as long as they are able to accurately judge the quality attributes' (Caswell, 1997, p.6). The competency expectations upon consumers in a free market are considerable. Individuals need to be able to identify and distinguish between the environmental performance of various products and determine the truth of advertising claims. They also need to be able to judge the quality, accuracy and reliability of information itself.

As it is assumed that information tools will assist such competency, their relationship to knowledge and learning needs to be clarified. While 'formal' learning occurs through educational institutions, 'non-formal' and 'informal' learning happens through media, peers, community networks and information campaigns. Curiously, there are few references to learning processes in policy documents, despite some recognition of the challenge of educating consumers on such matters as 'the lifetime costs of products' (Fussler, 1996a, p. 300).

Learning involves both conceptual and instrumental knowledge. Conceptual knowledge underpins environmentally responsible decision-making: 'Without a sound basis of scientific knowledge, and public understanding of its implications, policies for sustainability are unlikely to be as well formulated or widely supported as they should be' (IUCN *et al.*, 1991, p.73). Such conceptual knowledge provides the essential framework to comprehend and make use of increasing amounts of information about the environment. Understanding the fundamental principles of how ecological systems function, how economics works (including the pricing of materials) and how social systems function (including individual rights and collective decision-making processes), should underpin rational decision-making.

Concepts based on scientific understanding of how ecological systems work are central to all sustainability theories. These concepts help determine the effectiveness, limits and consequences of economic activities, especially those involving the consumption of natural resources. They include carrying capacity, natural capital and life cycle assessment (McEachern, 1996). A life cycle perspective is fundamental to all supply side approaches, existing inherently in the definitions of eco-efficiency, cleaner production and industrial ecology. Life cycle analysis identifies the environmental impact at every stage of a production process from 'cradle-to-grave'. Similar 'systems thinking' underpins DFE, environmental management systems and supply chain auditing (Ryan, 1995, p.79). At the elementary level, consumer understanding of product attributes such as recyclability is being encouraged, while companies are making full environmental cost accounting and 'closed loop' processes a part of product development cycles (UNEP and WBCSD, nd, p.7).

Education of decision-makers on both the supply and demand sides is essential. The Nordic Council of Ministers envisages that it is feasible for agriculture to be based on eco-efficiency by 2030 and supply 'environmentally compatible' food products, if there were 'more environmentally aware producers and consumers' (Nordic CoM, 1999, p.22). Such a goal would mean increased understanding by all actors of every impact along the food chain from 'paddock-to-plate' and beyond.

Currently, about one fifth of all energy consumed is used to grow, transport, process and store food to create end-meals (Pantzar, 1995, p.99). The Wuppertal Institute's innovative study on material flows in orange juice consumption in Germany revealed that 25kg of materials (mainly water) and 12m2 of land was required to produce 1 litre of Brazilian juice. The material intensity for 1 litre of the product from California was considerably greater (Kranendonk and Bringezu, 1993, p.459). If food miles and disposal of wastes are added, then the total 'ecological rucksack' of this daily food item in industrialised countries is considerably more.

A study of Finnish food production found that only half the energy inputs were in agriculture and industrial food processing, with consumer choice of energy-intensive food, such as animal products, heated greenhouse-grown and frozen foods, having high impact. Eating outside the home accounts for five per cent of the total energy input to meals, shopping by car 10 per cent and the refrigeration, preparation, cooking and washing up at home another 15 per cent (Pantzar, 1995, p.102-103). A Danish study shows that 'eating' (including shopping transport) accounts for a third of a household's environmental impact, far greater than any other activity (DEPA, 1996b).

With such impact from daily decisions on food consumption, should people be aware of the fundamental scientific principles and processes concerning ecological systems? The Natural Step (TNS) is an example of a conceptual knowledge framework used by business and governments in many countries. Although mostly applied inside organisations and to suppliers, it represents a clear conceptual knowledge base for the informed consumer. The TNS model was developed by Sweden's Dr Karl-Henrik Robert in 1989 and uses several universally accepted and basic scientific principles, such as the law of thermodynamics, to define four 'system conditions' necessary to achieve sustainability. These are:

- substances from the earth's crust cannot systematically increase in the biosphere;
- substances produced by society cannot systematically increase in the biosphere;
- the physical basis for productivity and diversity of nature must not be systematically deteriorated, and
- in order to meet the previous three system conditions, there must be a fair and efficient use of resources to meet human needs (Hays, 1995, p.5).

Although the last principle relates more to values and ethics than the physical sciences, it is gaining business acceptance (Willums, 1998, p.24).

Thinking in terms of ecological systems is integral to the concepts of eco-efficiency, cleaner production, dematerialisation, Factor 10 and industrial ecology, whilst life-cycle analysis (LCA) directs attention to the actual end-service that products provide and represents a 'metabolic systems' approach to product development (Panzar, 1995, p.94). The concept of industrial ecology makes an analogy between living organisms and the economic system in which industrial activities operate: 'The economic and material linkages within societies must be identified, understood, and modified to reduce the withdrawals of energy and materials from the natural stock and the disposal of wastes back into the environment. The coupling of human activities to such a systematic framework is the basis for a new organising principle called industrial ecology' (Ehrenfeld, 1995, p.39).

LCA is also beginning to be seen by industry as a strategic information tool to support marketing and labelling. However, wide variations in the methodologies used in both LCA and certification for eco-labelling schemes can impact on the credibility of marketing environmentally improved products. Also, because 'an ultimate LCA can be very difficult to perform' it could be used by producers to avoid the precautionary principle or making the information publicly available (Ryden and Strahl, 1995, p.130).

It is instrumental knowledge, supplied through eco-labelling and informative marketing, that assists consumers to search for and utilise information. Conceptual knowledge of the causes and effects of environmental damage is not very effective on its own (De Leeuw, 1995, p.11). Often 'awareness raising' or 'education' campaigns provide no instrumental knowledge as to how and what actions consumers should take. Both forms of knowledge are needed to build competency for informed decision-making. Hopfenbeck considers that 'since business intends to fulfil long-term consumer needs, the consumer's ecological awareness is of vital importance [and this includes]:

- being informed about the ecological consequences of their buying habits, which depends on market transparency
- having insight into the consequences of purchasing behaviour including the problems and disputes connected with the product, and
- being ready to change habits and to contribute to environmental solutions by adaptation' (1993, p.179).

Without education, the benefits offered by innovative and environmentally responsible products may be seen by skeptical consumers as too complicated to determine. With

confusing and uncertain scientific facts causing misunderstandings, it is important to provide a background to claims and to undertake market research to verify that such information is understood (Cattanach *et al.*, 1998, p.109).

3.12 A reality check on consumers' competency

3.12.1 Low knowldege levels

The environmental knowledge base required for competent decision-making by consumers appears to be daunting. According to Hopfenbeck: 'There is no doubt that knowledge about ecological questions has increased over recent years. However, it cannot be inferred that this knowledge has actually had an effect at the level of the consumer' (1993, p.179). As we have seen, a combination of factors influences consumer decision-making. But what exactly are the environmental knowledge levels of consumers? Even though marketers mainly measure purchase-specific knowledge rather than general environmental knowledge, there are sufficient findings to suggest that 'ecological literacy' may not be well advanced in mainstream consumers.

An Australian survey shows over 20 per cent of people worry about fresh water pollution, while less than four per cent are concerned about two main causes, namely agricultural fertilisers and pesticides. More surprising, despite years of expensive information campaigns and media coverage, 56 per cent believe that the "greenhouse effect" is caused by 'a hole in the Earth's atmosphere'. While only one third of respondents could answer correctly another six basic environmental cause-effect questions, just 10 per cent considered that their own understanding of environmental protection issues was below average (NSW EPA, 1994, p.10). Less than half of Norwegian consumers know that CFCs contribute to the depletion of the ozone layer (Ramm, 1996, p.15). Half of Finnish consumers cannot link energy consumption to global warming and two-thirds confuse "greenhouse" and ozone causes (Niva *et al.*, 1997, p.1). Meanwhile, senior managers in Dutch industry confuse the issues of climate change and ozone depletion while having high expectations that government is responsible for climate issues (Beuermann, 1997, p.19).

The environmental literacy of students undertaking business courses at tertiary institutions has been questioned by the WBCSD (Willums, 1998, p.7). For youth about to graduate from secondary schools, this may not be the only concern. A Norwegian study has found student knowledge about the economic system, especially credit and food costs, to be low: 'very few

have a knowledge of the central features of income and expenditure flows in the household...and knowledge is lacking about the entirety of the system' (Borgeraas, 1995, p.4). Basic understanding of the 'social system' was also questionable, as general knowledge of consumer rights is 'weak'.

The blame for poor knowledge levels cannot be placed solely on formal education or the media. Surveys in the US (for example) on green marketing have found 'much of the jargon to be incomprehensible', with a common term such as 'recyclable' understood by only 10 per cent of consumers (Wasik, 1995, p.95). Vague statements such as 'environmentally friendly' contribute little to consumer knowledge (Winter, 1988, p.90) and, although they are not as widespread in Norway as in the US, passive exhortation claims such as 'please recycle' also add little to consumer abilities (Enger, 1997, p.17). This must be of concern, as instrumental knowledge, such as eco-labelling, can help 'bypass the prevailing lack of general environmental literacy' (Niva *et al.,* 1997, p.3). But as Finnbogadottir reminds us, any product information is ineffective if consumers do not understand it. She questions the extent of public understanding of even such basic sustainability concepts as the 'cradle-to-grave' principle: 'would the average newspaper really know what it means?' (1994, p.140). A prerequisite for more effective consumer demand would be to ensure that sustainability concepts are explained and transformed into a 'more tangible vocabulary' for people, according to Rensvik. Although consumers show consistently strong concern for the environment they appear to be in a weak and handicapped position:

> Their perception of what specifically needs to be changed is rather vague; they are not able to see the effects of their actions as consumers; they lack relevant alternatives to enable them to choose goods and services that are environmentally friendly; they lack relevant specific information about the available alternatives; and, they lack clear incentives to change their behaviour (Rensvik, 1996, p.18).

But determining how much information consumers need is complex: 'There is reason to ask whether consumers make use of the information and product label information that already exist, and whether supplying more information is the best solution to the information problem' (Tufte and Larvik, 1997, p.15). A 1997 survey of Norwegian consumers showed a massive increase in the number of people saying that they do *not* look for environmental information on products; 46 per cent compared to only 28 per cent in 1995 (*Norway Now*, December 1997). Another survey showed only 14 per cent of Norwegian consumers

regularly read grocery labels to check for environmental information, due, most likely, to the absence or the poor quality of information on food packaging (Ramn, 1997, p.2).

Most consumers are not able or willing to search for detailed information on all purchases, particularly if pressed for time inside shops: 'Making consumers work hard to become green inevitably means a lot of them won't be bothered' (Sylvan, 1997, p.5). Marketing is not helping consumer knowledge levels when over half of all claims refer only to waste/disposal. Just six per cent of claims provide environmental information on the production and distribution phases of a product's life cycle (Enger, 1997, p.13). There is widespread criticism that most 'green marketing' has been 'uniformative, lacking in substance, misleading, unclear and based on generating short-term market advantage instead of long-term trust and relationships (Prothero *et al.*, 1997, p.75).

3.12.2 Low recognition of learning

Business and government appear to recognise the need to improve information supply for consumers: 'If you provide better information to consumers they will start to vote with their purchasing power and thus change the market' (Fussler, 1996b, p.11) and, more specifically: 'Consumers will have to have much more reliable and relevant information through eco-labelling, for example, if they are to make rational decisions' (Dowdeswell, 1996, p.2). However, as shown, the supply of information is only half the challenge. Improving the cognitive and information processing skills of consumers will involve learning. While it is widely acknowledged that sustainability is basically a learning process, few policy tools focus on consumer learning. Policies have a premise that the public will incidentally become more sophisticated in 'understanding environment and key interactions' (Hazen, 1997). While government sees itself providing reliable environmental information to the broad public, business seeks to facilitate organisational change along product chains. However, neither appears to address consumer learning directly, relying instead on information to 'raise awareness' and then change attitudes and behaviour. But, the OECD points out: 'information and learning are the two sides to the same coin...understanding when and how people learn can guide policy efforts' (1996a, p.22).

Perhaps, though, this relationship (articluated by the OECD, above) can be overstated. Information, knowledge and learning are not synonymous. Elementary behavioural and educational psychology theories all emphasise that information must be converted to knowledge before an individual can understand its relevance and use it in decision making. By converting and internalising information into knowledge, the individual engages in a

learning process. However, knowledge is difficult to gain in a technological world of increasing 'information overload' and 'info-tainment'. Even though knowledge is, in effect, 'value added information', it does not follow that the information age is synonymous with the 'knowledge age'.

Why are there so few references to consumer learning in discussions about information instruments? Educators involved in 'organisational learning' offer some insight. Senge believes the problem today is that learning has lost its main meaning in contemporary usage and has become synonymous with 'taking in information'. Compared to receiving information, learning is an 'adaptive and generative' process that expands an individual's or organisation's capacity to "create its own future"'(Senge, 1992, p.13). If sustainability is the preferred future for humanity, then all policies should be oriented towards such learning outcomes sooner rather than later. This would involve not only formal education but also informal learning through marketing and other information tools.

There are many different theories about how people learn and such complex discussion is beyond the scope of this study. However, there are three basic preferences for responding to information, with individuals either primarily visual, auditory or kinaesthetic learners (Rylatt, 1994, p.80). The most powerful learning path, according to Senge, is through direct experience, such as when consumers try new food products or purchase directly from growers. The basis of effective behaviour change is also 'learning by mistake...taking action and seeing the consequences of that action and changing behaviour to new, different action' (1992, p.23). The problem for consumption today is that people are increasingly removed from the environmental impacts of their choices as urbanisation and global trade increases. This is a dilemma for effective learning: 'We learn best from experience but we never directly experience the consequences of many of our most important decisions' (1992, p.23).

This section has questioned whether consumer abilities, especially knowledge, are sufficient to make competent decisions. The tendency for marketing and eco-labelling to be applied only to 'niches' rather than to mainstream consumers suggests that the learning processes required for consumer education may not be happening. Along with doubt about the effectiveness of formal education, there is now uncertainty as to whether these tools are actually building consumer competency to make informed choices. The tools may instead be simply relying on existing knowledge foundations, often built through schools, government and NGO campaigns, media reports or peers.

3.13 Critical issues arising from demand trends

It has been shown in this chapter that significant barriers exist to changing individual consumption in industrialised countries. If consumers in wealthier countries continue to maintain unsustainable consumption patterns, the trend cannot possibly give much confidence to developing countries. Evidence from Norway, in particular, refutes the conventional wisdom that increased individual wealth will deliver more environmentally responsible behaviour. The underlying pattern in demand is inconsistent with the goals and expected outcomes of policy tools, especially the information instruments. The behaviour of consumers is not as 'green' as policy makers assume. The real challenge may not lie with changing 'business as usual' as much as changing 'consumption as usual'.

Can labelling and marketing deliver adequate demand for environmentally responsible goods and services? There are some doubts emerging as to the extent to which these tools can ensure that demand keeps pace with improvements on the supply side. The assumption that there are sufficient 'green' consumers to continue to drive demand is weakly founded in light of the evidence presented. Intransigent obstacles, such as price resistance, are preventing positive consumer attitudes being followed up with purchases of environmentally responsible products.

The following three factors have emerged for closer investigation during the course of the thesis.

1) Price

There appears to be little policy debate occurring about the contradictions of price-based marketing. Continuous 'price wars' for conventional products on one hand and 'premium pricing' for environmental sound products on the other, appear to be unsustainable, especially in the case of food. The associated assumptions about quality and niche segments in such marketing ignore the need to build the capacity of mainstream consumers to understand the internalisation of environmental and social (health) costs in prices.

Short-term focus on upfront purchase costs as opposed to longer-term savings makes for slow acceptance of eco-efficiency across society as a whole: 'A key barrier in developing sustainable products is the emphasis on price as opposed to cost. Many consumers and many companies make purchases on the basis of a product's price, as opposed to the total cost of owning and using the product' (Peattie, 1995, p.288). An example is the Tasmanian housing

industry's initial opposition in 1998 to energy efficiency standards for new houses. Longer-term savings for consumers from such investments were dismissed because the industry appeared to have little faith in consumer understanding of such benefits.

2) Responsibilities

Overcoming the 'free rider' tendencies of both producers and consumers involves another form of 'internalisation'; that of individual responsibility for environmental quality and equity. Democracy is fundamentally about shared responsibilities for both problems and solutions. Social instruments exist on the assumption that they will guide individuals towards voluntary choices for sustainable lifestyles. Such information is seen to be as necessary as legislation and economic instruments (Vitterso and Strandbakken, 1998, p.1). But there is no guarantee that when it comes to reducing consumption, humans will change voluntarily. Hopfenbeck advocates instead much more attention to learning: 'why should it not be possible to educate our children towards ecologically sound behaviour? Even politicians sometimes learn through pressure "from below" to make their behaviour ecologically desirable' (1993, p.16).

How to improve the individual's capacity for change is becoming a central issue for sustainability policies as rapid globalisation creates unease within many communities. Individuals need to feel some improvement in the change process. Issues of empowerment, participation, locus of control and levels of trust in government and corporations have to be addressed. These psychological factors are also important in consumer decision-making: 'faced with an environment that seems increasingly out of control, consumers are seeking to re-establish control through their purchasing decisions' (Peatie, 1995, p.93). Yet, as Peattie points out, it is also the perceived need for 'control' that is increasingly driving consumers to use private cars. Such a trend was observed in Norway where US-adapted marketing emphasises 'safety' fears in 'violent' cities, the 'inconvenience' of public transport and the 'solution' of private car use.

The roles, rights and responsibilities of various actors to provide positively reinforcing signals and consumer learning opportunities will need to be considered further. In the Nordic countries, where legislation protecting consumer rights and corporate social responsibility is relatively strong, these factors must be examined to determine the causes for the demand barriers.

3) Knowledge abilities

One clue to developing consumer capacity to internalise individual responsibility is to focus on the role of environmental knowledge in 'informed choice'. Knowledge, generally, is one of four variables affecting the individual's sense of empowerment (the other three factors are satisfaction [or dissatisfaction] with the current situation, a clear vision [or lack of a vision] of the future, and belief [or lack of belief] in one's ability to change). Knowledge includes understanding how, what and why change is occurring in the surrounding world (Rylatt, 1994, p.8) and applies to all actors. Hart argues that integrated environmental management strategies should not only guide competency development within a company but also shape the organisation's relationships with stakeholders, including customers: 'companies can and must change the way customers think by creating preferences for products and services consistent with sustainability. Companies must become educators rather than mere marketeers of products' (1997, p.75). This argument particularly applies when the criteria for eco-labels are not widely understood, thereby creating mistrust. Consumers may also dismiss labels if the integrity of third party verifiers is unknown or questionable.

As demonstrated by trends in Norway, the consumer society, with its pursuit of ever-increasing material wealth, is not synonymous with qualitative human development. Sustainable economic development could, however, be measured by 'growth in knowledge, in human capabilities and in social capital' (Gallopin *et al.,* 1997, p.4) To do so will require greater attention to how knowledge is obtained and used by individuals acting as consumers.

This chapter has examined the issues arising from current consumption patterns and trends as they affect 'informed choice'. It is contended that there is a significant gap between the assumed and real market impacts of 'green' marketing and eco-labelling. There are serious contradictions and inconsistencies in consumer responses to environmentally improved products and services in industrialised countries. However, little research exists that fully examines the causes for the barriers inhibiting consumer choices. One reason may be that providing effective information support to consumers is still at the 'end-of-the-pipe' in government and business approaches to sustainability. From the evidence discussed in this chapter, a likely scenario is emerging that potentially carries considerable risk for current sustainability strategies; the possibility that the voluntary, market-driven approach of 'informed choice' could fail to support supply-side improvements.

In the next chapter, the causes identified to date will be further investigated. The experiences of organic food demand in Norway will be analysed to determine more accurately the

relationships between internal and external factors influencing consumer choice. The findings will help clarify why information tools are having limited success and how important environmental knowledge really is for informed decision-making by consumers.

CHAPTER 4:
CRITICAL OBSTACLES AND KEY SUCCESS FACTORS IN ECOLOGICAL FOOD DEMAND

4.1 Introduction

The purpose of this chapter is to obtain a clearer understanding of barriers and solutions to informed consumer choice. It seeks further insights into contradictions in patterns and ino the apparent weakness of the information tools identified in the previous chapter. A closer analysis of the ecological food product chain in Norway will elucidate the complex relationships between internal and external factors that influence consumer decision-making.

In the previous chapter, contradictions were identified between theory and practice, and between policy expectations of information instruments and consumer demand. The chapter outlined the trends in private consumption in industrialised countries, especially Norway, raising doubts about the assumption that consumers will drive the implementation of sustainability. The main elements constraining demand market and informed choice, were identified as:

- a large 'attitude–action' gap exists in consumer behaviour;
- 'green' consumers are a smaller percentage of total consumers than was anticipated;
- prices still do not internalise environmental and social costs;
- broader and subjective factors influence 'rational' decisions;
- complex external signals and factors influence consumer decisions;
- supply and demand are poorly coordinated; and
- the effectiveness of 'green' marketing and eco-labelling is uncertain.

Particular attention has been given to the relationship between the above barriers and the role of knowledge in consumer behaviour. One key relationship is the role of knowledge as the foundation of 'informed' choice and consumer competency. Levels of conceptual and instrumental knowledge on the part of consumers may be crucial in explaining the gaps and contradictions. If 'environmentally conscious/responsible' behaviour is the dependent variable, then the independent variables of most interest are those that may inhibit or accelerate informed choice. These would be mainly 'information related' variables such as the quality and quantity of information about the product's environmental impact, costs of production, and benefits and costs of consumption.

Although structural and market factors inhibit the supply of products, the attitudes and knowledge of the actors along the product chain are also influential in shaping consumer demand. The focus of this chapter will be the extent to which conceptual and instrumental knowledge affects consumer behaviour, both positively and negatively, in the specific case of demand for 'ecological' (or organic) food in Norway.

The perceptions of key actors in the 'hard edge' example of organic food products, in particular *Debio*-labelled milk, helps clarify consumers' motivations, abilities and opportunities to use information about ecological products in decision-making. Insights will include how these actors see consumer perceptions of the consequences of choices, product attributes and information tools.

4.2 The *Debio* product information chain

The *Debio* eco-labelling scheme certifies all organic or (as generally referred to in the Nordic countries) 'ecological' food products in Norway (the terms will be used synonymously here). The national, third party verified scheme applies to both 'green' (as in fresh) and dry groceries, including imports. While Norway is not a member of the European Union (EU), legislation of organic farming is subject to EU regulations, through an economic agreement with the EU. *Debio's* certification is also in accord with the International Federation of Organic Agriculture Movements (IFOAM) standards. The only other Norwegian label for environmentally improved food products is the international *Demeter* label for biodynamic produce, which is jointly labelled with *Debio*.

Table 4-1: Nordic national eco-labels for organic food and year of establishment

Norway	Debio (1986) (*with Demeter labels also retained)*
Denmark	State ('crown') ecological seal (1991)
Sweden	KRAV (1994) *(NB this is not an acronym)*
Finland	Luomu (1997)
	(with earlier Luomuliitto (1986) and Demeter labels also retained)
Iceland	Tun (1994) and Liv (1995).

Note: In all countries, biodynamic farming started in the 1920s.

Although *Debio* is the oldest national scheme in the Nordic region, government support only commenced three years after the label's introduction in 1986 (see Table 4-1). The production of ecological food in Norway is considerably smaller than Denmark and Sweden, with the more recently introduced national scheme in Finland accelerating at a faster rate (see Table 4-2). In all Nordic countries, consumer demand is reported as exceeding supply and is growing at between 20-30 percent annually. The market share held by organic food in 1999 was still relatively low in all Nordic countries (as it is worldwide) with Norway's total demand being closer to Iceland's 0.5 per cent than Sweden's 3.0 per cent. In 1999, organic milk had over 20 per cent of the Danish market compared to under four per cent in Norway. The Norwegian situation therefore makes an interesting analysis of the factors constraining both supply and demand.

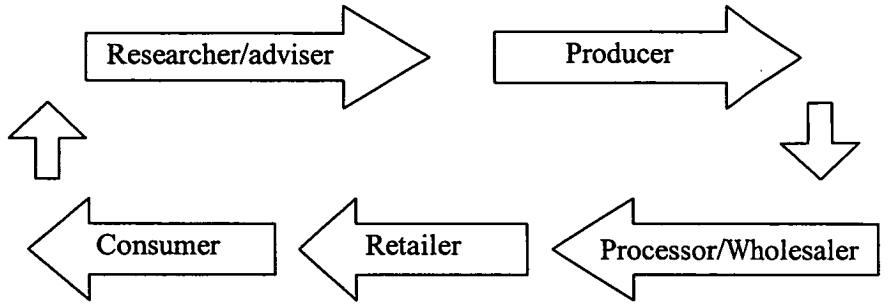
Table 4-2 : The growth in percentage of certified organic farms between 1993-99

Norway	0.5 – 1.8
Denmark	0.5 – 6.0
Sweden	1.0 – 7.5
Finland	0.2 – 5.0
Iceland	0.2 – 0.9

Sources: Kallander (2000), Johnsen and Mohr (2000), Norfelt (2000), Dyrmundsson (2000) and Heinonen (2000).

To clarify the factors inhibiting consumer demand for ecological food, the main actors in the *Debio*-labelled product chain have been identified. These organisations constitute both the main sources of product information and the key influences on consumer decision-making (excepting formal educational institutions and the media). Care has been taken to ensure that all the main actors participating in the flow of information along the food product chain were included for the *Debio* analysis (see Figure 4-1). The people interviewed were not simply those in the immediate chain of producer-retailer-consumer. They were also taken from broader social, market and policy organisations (including government agencies and NGOs) that influence the information flow to end-users of food products.

Figure 4-1: Main actors in the information flow along the food product chain



The main actors in the *Debio* information chain are:

- Pre-production inputs, such as government policy advisers, researchers and the eco-labelling scheme itself;
- Producers (farmers), as represented by the two main industry/branch associations (the large and small farmers' unions);
- Processors (manufacturers/wholesalers/distributors), represented by the dairy industry's marketing organisation;
- Retailers, represented by a chain of stores with 25 per cent market share (and the only chain to profile organic products); and
- Consumers, as represented by the main consumer advocate organisation.

The author has not interviewed individual Norwegian consumers, as it would have been impractical in terms of time and resources available. Instead, the findings of surveys conducted by the organisations directly involved in gauging consumer feedback, such as the NGO Consumer Council (*Forbrukerraadet* [FR]) and the National Institute for Consumer Research (*Statens institute for forbruksforsning* [SIFO]), were used (see Table 4-3). In addition, public opinion surveys from other actors in the product chain and media were used. Where relevant, comparisons to findings from other Nordic researchers have also been made. Several researchers were interviewed within both FR and SIFO, along with those in Sweden, Denmark and Finland. Personnel in eco-labelling schemes were also interviewed in Sweden, Finland and Iceland. Observations of individuals, retail stores and media coverage were made during several visits to all five countries (1997-2000).

Actors with significant input into the information flow are included in the table of organisations representing stakeholders. The background of the organisation ('chain actor') is provided along with its main characteristics relevant to understanding the broader context. These characteristics are used to introduce a pattern of linkages between various actors, especially through the close networks of professionals in Norway. Examples include Ministry of Agriculture, farmers' association and processor, and the indirect funding of some actors by the Ministry of Environment. The vertical relationships between actors in the product chain also parallel those in policy input processes, as demonstrated by the overlapping membership of various organisations in the chain. Thus, the insight gained from this study is both comprehensive and accurate, with a high degree of cross-referencing by the actors and their observed familiarity with each other's positions, perspectives and likely views.

While policy or public documents were used as the main sources of information, interviews were conducted with senior advisory personnel in the Ministries of Environment, Agriculture and Education. Media reports, especially conveying actor positions and research findings to the consumer, have also been utilised. The main interviews were conducted with individuals in senior management positions within the organisations, including *Debio* itself. These people had key roles in the transmission of information within their organisation and especially to other actors along the *Debio* product chain, including as communications or marketing directors.

Interviews focused on identifying, analysing and comparing the perceptions of these actors to:

a) current demand and consumption trends in Norway;
b) the main factors inhibiting the market position of ecological food;
c) the influence of marketing and eco-labelling on consumer choice;
d) the level of competency for informed choice;
e) the role of knowledge in changing decision-making;
f) the extent to which current tools improve consumer learning and competency;
g) the need for consumer education and improved information tools; and
h) the roles, responsibilities and rights of actors to inform consumers.

Views expressed are not necessarily those of the subject's organisation, but it was the individual's position in the organisation that was the main background factor underlying their personal perceptions. The survey was mainly qualitative and views of respondents are noted when differentiation of answers occurs. The frequency and weight of answers is

recorded on a scale of High (H), Moderate (M) or Low (L) in tables summarising their views. Where there are significant points made, statements are quoted.

Table 4-3: The broader actors in the Debio *chain*

CHAIN POSITION	CHAIN ACTOR	ORGANISATION'S CHARACTERISTICS
Pre-production Organic certifyer and marketer	• Debio	-Two-thirds funded by Ministry of Agriculture. -Independent board members are nearly all actors in the chain, including Ecological Farmers Association, NBL and NBS.
Government	• Ministry of Agriculture • Ministry of Environment	- First Five Year Plan for ecological food production (1998-2002) followed by a new plan with ten per cent organic farms target by 2009. -Funds the GRIP* Centre that operates training courses for the Cooperative (NKL) retail chain.
Environmental NGO	• Environmental Home Guard or (MHV)	-Funded by Ministry of Environment. -Board of members including CC and Cooperative.
Production Large producer Small producer	• Farmers Union or NBL • Small Holders Association or NBS	-Main 'industry branch' for farmers and graziers with 66,000 members. - Represents the majority of Norwegian farmers traditionally owning smallholdings (14,000 members).
Processor (Wholesaler)	• TINE* (Norwegian Dairies)	-main milk processor (nearly 98 per cent of market). -main marketing board (until mid 1990s marketed all dairy products).
Retailer	• Cooperative (Consumers Cooperative Association) or NKL	-One of four main food chains. -Owned by 900,00 members (consumers) -1250 stores with 18,000 staff -Members and staff undertake GRIP training.
Consumer	• Consumer Council or FR	-'Umbrella' consumer NGO. -Represented on MHV and *Debio*
Post-consumption	• National Institute for Consumer Research of SIFO	- Education/Research body funded by Ministry of Consumer Affairs

MHV is *Miljo Heime Vernet*; NBL is *Norges Bondelag*; NBS is *Norske bonde og sambrukarlag*; NKL is *Norges Kooperative Landsforening* (the parent company of the the Consumer Cooperative (*Forbukersamvirket*) chains; FR is *Forbrukraadet*; SIFO is *Statens institute for forbruksforsning.*
* GRIP (GReen In Practice) is the Centre for Sustainable Production and Consumption; *TINE is the trading name for Norwegian Dairies (*Norske Meierier*).

4.3 What are the critical obstacles in consumer decision-making?

A number of inhibitors to consumer demand for ecological food have been identified. All actors in the *Debio* chain agree that there is a considerable gap between consumer attitudes, intention and actions. Although levels of awareness and intentions on the part of Norwegian

consumers to purchase organic food are relatively high, their actual behaviour still results in low market share. Interviewees identified several 'pressure' points that contribute significantly to the current low level of market share for organic food in Norway. Table 4-4 indicates the weight of each factor. These cover the main economic, social and political constraints inhibiting demand growth, and include the nature and/or quality of:

- environmental messages in marketing, various labels and other information sources;
- product supply;
- regulations and market structure;
- price;
- other actors' roles; and
- consumers' motivations and abilities.

While the Norwegian market is seen to be less 'mature' than those in Denmark and Sweden, the actors do not stress any single reason, but rather several of varying weight. Over half the interviewees identified the main reasons for low consumer demand to be price, poor quality perception and insufficient information about organic food products. However, two-thirds named inadequate supply as the biggest barrier.

Table 4-4: Main barriers to improving demand for Debio products

Actors / Barriers	Debio	ENGO	Large Producer	Small Producer	Processor	Retailer	Consumer Advocate
Supply (consumer opportunities)	H	H	H	H	M	H	H
Consumer motivations	M	M	M	M	M	L	M
Consumer abilities	H	M	M	H	M	H	H
Other actors	H	H	M	H	H	M	H
Marketing	M	H	H	H	L	H	H
Labelling	L	M	L	M	L	L	M
Other information tools	H	M	M	M	L	L	M

H=High, M=Moderate, L=Low (or not mentioned) weight of views of actors

Several barriers to consumers choosing organic food exist, then, and to assist further refinement, these are categorised into internal and external factors. This categorisation is also based upon a review of the general literature on attitude-behaviour relationships and is a variation of the Motivation-Opportunity-Ability Behaviour model of Thogersen and

Andersen (1996, p.182). The internal variables are grouped into consumer motivations and abilities, while the external variables are identified as consumer opportunities to act. They are as follows:

Internal: Motivation

- attitudes (environment and health, including fears/risks);
- perceived personal responsibility (moral obligation to foster sustainability);
- perceived product attributes (performance, quality and differences);
- psychological factors (locus of control/empowerment, trust, extent of choice and lifestyle aspirations); and
- personal experience (of product, environment and consequences of decisions).

Internal: Abilities

- conceptual knowledge (including 'abstract' attributes of products);
- instrumental knowledge/information use skills (including eco-label recognition);
- confidence with complex decision-making;
- variation of habitual purchasing behaviour; and
- economic circumstances (household budget).

External: Opportunities

- supply (access to product alternatives);
- supply of information (of product, production methods and impacts);
- socio-political climate (signals, rights, regulations and social norms);
- varied experiences;
- time and pressures; and
- price structures (subsidies, imports).

Table 4-5: Main inhibitors to consumer demand for ecological food

Actors	Debio	ENGO	Large Prodcuer	Small producer	Processor	Retailer	Consumer Advocate
Barriers							
Consumer motivations							
Attitudes to environment	H	M	L	H	M	M	H
Attitudes to health	M	M	M	M	M	L	M
Responsibility for sustainability	H	H	M	H	H	M	H
Perceived consequences/risks	M	H	L	M	H	L	H
Perceived product attributes	H	M	M	M	H	H	M
Consumer abilities							
Conceptual knowledge level	H	H	M	M	M	H	H
Labelling knowledge	M	H	M	M	L	L	H
Information search/use skills	M	M	L	M	L	L	M
Time (convenience)	M	M	M	M	L	L	M
Habitual purchases	H	M	M	M	L	L	M
Perceived economic costs/budget	H	H	H	M	H	H	H
Previous experience	H	M	L	M	M	H	M
Consumer opportunities							
Information provision	H	M	M	H	H	H	H
Prices	H	H	H	H	H	H	H
Labelling quality	M	M	M	H	M	L	H
Marketing quality	H	M	M	H	M	H	H
Product supply (availability)	H	H	M	H	M	H	H
Trust	M	M	M	M	H	M	M
Socio-cultural norms	H	M	M	M	M	M	M
Other actors' roles							
Support	H	H	M	H	H	H	H
Infrastructure	H	M	M	H	L	H	M
Regulations	H	M	L	H	L	M	M

H=High, M=Moderate, L=Low (or not mentioned) weight of views of actors

4.4 Specific attitudes of consumers inhibiting demand

4.4.1 Internalisation of responsibility for sustainability

The actors in the *Debio* chain are aware that a wide range of internal variables influence consumer preferences, including: psychological needs, risks and fears; ethics and values; trust in sources; knowledge levels; time and convenience; locus of control; bias against innovation; and the level of internalised responsibility. These all affect motivation to change, overall cognitive abilities and perceptions of consequences, costs and benefits. It is recognised that the degree of internalisation of responsibility by individual consumers

influences their motivation to reduce consumption, to seek information and to exercise opportunities to choose environmentally improved products.

There is some evidence to suggest that Norwegian consumers tend to see responsibility for sustainability as more of a public issue than a personal one. This may be linked to a low perceived 'locus of control' over sustainability patterns and a sense that a country of 4.3 million may not be able to make much difference when it comes to consumption, unlike involvement in international peace and security issues. It was observed that a 1998 report indicating that Norwegians were the world's greatest polluters did not generate widespread debate.

Several actors have inferred linkages between internalisation of responsibility and the internalisation of environmental costs in the price of food. With the price of 'industrially' produced poultry and pigs markedly cheaper than ecological products, 'consumer power must change to make politicians take their responsibility more seriously and not simply tell people "you shouldn't buy this or that"' (Small Producer, 1997).

Societal pressures can either constrain or encourage consumer support for ecological food, and in Norway's case they appear to be neutral at best. Peer pressure seems to provide only weak support in the main target groups of women and youth. The socio-cultural-political signals about organic food are mixed, with research and industry messages particularly confusing for the consumer (Small Producer, 1997). Unlike France and Denmark, Norwegians do not have a tradition of being 'political consumers', instead concerning themselves with access and quality rather than other issues (Consumer Advocate, 1999). This could contribute to consumers adopting 'free rider' thinking, especially in relation to perceived economical costs. Such attitudes occur when individuals regard their own actions as insignificant whilst attributing responsibility to those not doing their 'fair share' (Heisakanen *et al.,* 1995, p.15). About half of the actors in the *Debio* chain also suggested others in the chain could be acting this way, as well as the majority of consumers.

Norwegians' perceived 'solidarity' with other people to achieve inter and intra generational equity appears not to extend to food choices. Supporting the transition to global sustainable food production will be difficult because 'nobody wants to pay more tax or price; everyone wants everyone else to do something and they do business as usual...no one at this point of history is willing to give up their own consumption for other people to consume more' (Processor, 1998). Such a comment is ironical in light of the increasing discounting of food by the retail chains. As discussed in the previous chapter, Norwegian wealth has seen an

increase in excessive consumption. One of Norway's role models for young adults is Stein Erik Hagen, owner of the largest discount food chain *Remi*. His spending of A$0.3 million on a birthday party for himself prompted the comment: 'Yuppie years have never really ended in Norway' (*Dagbladet,* December 1996).

The issue of responsibility is related to a strong cultural trust in authorities and consumer perceptions of the roles of government and business. Two important cultural factors are at work here. One is 'dugnad', in which individuals accept communal responsibility to undertake collaborative, voluntary work rather than simply make a monetary payment (EHG, nd, p.18). Although observed to be possibly stronger in Sweden, this Nordic trait does suggest a sense of obligation to care for 'the commons' and the 'common good'. The other influence is the considerable faith in the institutions of government, reinforced by the decades of strong 'social democratic' governments, which led Norway into its 'industrialisation era' in the early-mid twentieth century. Even today, some of the largest corporations are still fully or partly state-owned enterprises, such as Norske Hydro (artificial fertilisers) and Statoil (energy). According to Hille, the faith in this 'industry-political' sector extends to a high trust in science-technology-research institutions (1998). In the case of 'ecological' food, consumers may be deferring responsibility to the trusted state sector, especially when politicians take a high profile on acting to protect the environment or public health.

No actor suggested that government should do less; rather some advocated that it should take more responsibility, especially to support consumers gaining 'locus of control' over food safety issues such as BSE and GMOs. One possible factor behind the advocacy of higher government involvement may be that, whilst the influence of environmental NGOs 'has peaked', governments have not yet realised it and are responding to 'idealistic producers driven by their own beliefs in ecological agriculture...If consumers were that concerned then the market share would reflect it, but it does not' (Processor, 1998).

4.4.2 Environmental attitudes and perceived risks

According to Soler, the level of personal experience that consumers have with the production and consumption of food in the environment ('ecological clues') influences purchasing behaviour (1995). Attitudes towards the environment and health are influenced by social norms and Norwegians have a remarkably strong sense of cultural identity with their natural environment (Witoszeck, 1993; Eriksen, 1996). Norwegians have regular contact with rural areas, with a high proportion of the population being non-urban and

regular recreational activities, such as cross-country skiing and walking, being common pastimes for urban dwellers. This makes Norwegians generally protective of both 'nature' (as the environment is commonly described in the Nordic cultures) and of the social role that farmers have in maintaining the 'cultural landscape'. It is not surprising then that the marketing of both conventional and ecological food use images of 'clean, green and pure' landscapes. This mainstream identification with a trusted and caring conventional farming system can still lead many Norwegians to perceive ecological food as 'for weirdos, veggies, strange people – not normal people' (Large Producer, 1998). The Norwegian situation appears similar to that of Finland, where government agencies, research institutions and industry bodies 'collectively defined' ecological farming as a 'nonsense' until the 1990s, thereby making the 'threshold for starting ecological farming very high' (Katila, 1995, p.118).

Even though all actors believe consumers want to know more about food risks, trust in traditional Norwegian food products remains very high. The trust stems from the previously closed borders and absence of conspicuous imports, the need to use less pesticides in cold climates and 'one of the best animal welfare situations in the world' (Retailer, 1997). A similar perception of low risk occurs in Iceland, where the main consumer concerns are fat content and nutritional value of food, according to a survey by the Nordic Council of Ministers. Norwegians were the most concerned about additives in food while Danes worried about bacterial content. Only the Swedes placed GMOs, BSE and growth hormones in the highest category of concern, although these were of general concern in all Nordic countries (*Icenews*, 22 February 2001).

Norwegians have experienced limited media exposure to health risks, unlike the Danes who had drinking water contaminated by agricultural practices and 'scandalous' animal welfare conditions revealed. Compared in particular to Denmark and The Netherlands, animal welfare is not an issue in Norway, according to both small and large producers, as farmers and graziers operate in less industrialised conditions. However, all *Debio* actors perceived high risk from BSE mad cow disease and GMOs entering the food chain:

- 'In Norway 99 per cent of farmers don't want to produce GMOs because it risks quality and the image and they are afraid, uncertain about the larger consequences' (Large Producer, 1998).
- 'Retailers need to carry more responsibility to ensure that products sold are safe to humans and to the environment' (Retailer, 2001).

All actors agree that most consumers consider conventional Norwegian-grown food to be sufficiently 'clean and green'. This widespread public perception appears to be reinforced by continuous media reporting of research findings from scientists and investors placing conventional Norwegian products ahead of other European and Nordic food. However, according to Hille, these reports choose to ignore the high energy, forest and aquaculture impacts, because exporting industry needs to maintain an image of 'clean and green' (2001). Bjorkum believes that the development of 'confidence-based quality' has occurred in Norway because 'explicit scepticism towards or lack of confidence in foreign meat and meat production' is combined with the 'proximity to food production geographically, culturally and psychologically' (1999, p.1).

A perception of 'equalised' product attributes is inhibiting consumer support for organic food: 'Norwegians trust Norwegian food because the gap between ecological and conventional food is less than in Denmark, for example' (Large Producer, 1998). There is no sense of crisis with either human or environmental health, and with oil-driven wealth expected across society, 'no one discusses limits and there is plenty of space and nature' (ENGO, 1997). It has been widely reported that 'researchers have criticised the ecological movement, claiming that there is no evidence that the goods it produces are any different to traditionally cultivated food' (*Norway Now*, April 1998). In return the *Debio* message has emphasised that organic farmers follow the precautionary principle because the long-term effects of industrialised agriculture are still unknown. In a situation remarkably similar to Australia's, persuasive messages about longer-term environmental damage from food production seem to have minimal influence upon consumer behaviour.

But are risks to human health from food choices really of little concern to Norwegian consumers?

Older consumers consider health to be the most important issue for food and it is becoming a concern for younger adults, leading to the targeting of ecological marketing to: (a) 25-45 year old women (especially with children) and (b) youth, to build longer-term customers (Retailer, 2001). The marketing strategy adopted by the Norwegian Cooperative (or NKL) retail chain (hereafter rendered 'Cooperative') is the same being followed by the Sainsbury chain in the UK and the membership-owned Cooperative chains in Denmark, Sweden and Swizerland. According to some producers, consumers choose ecological products primarily for health reasons (Large Producer, 1998), though surveys by SIFO are ambiguous, showing that 62 per cent believe such products are healthier while 67 per cent consider them better

for the environment. Even so, more consumers choose on the basis of traditional food quality attributes such as freshness, appearance and taste (Torjusen *et al.*, 1999, p.31).

Whilst Nyberg estimates that, of the consumers purchasing ecological milk, 48 per cent do so for health reasons compared to only 23 per cent for 'environmental considerations' (1999, p.19), ironically, consumers reflect the concerns of retailers that ecological milk, because it is not homogenised, has a shorter shelf life, and in light of new food safety standards, this is 'a health risk compared to ordinary milk' (Processor, 1998). However, several actors expressed concern that processors overlook the health risk from conventional milk. A processor indirectly confirmed this: 'the problem with marketing ecological products is not to raise questions about other conventional products, which are the largest part of turnover. It is a situation that no producer or retailer wants to put themselves in. So how far to you go with information without risking the credibility of other products?' (Processor, 1998). When discussing scenarios for organic food demand, it was felt that neither suppliers nor consumers were confident: 'both supply and market watch each other, wait for prices to become acceptable, access to improve and if a crisis of confidence in quality emerges. While consumers continue to understand that everything is fine then demand for conventional products will remain high' (Processor, 1998).

One actor believes that Norwegian politicians' high profile for taking responsibility for the public's health is a key reason why consumers and producers have not had 'pressures' placed on them over food-related issues, compared to those in Denmark and Sweden (Small Producer, 1997).

4.4.3 Perceived economic costs.

All actors in the *Debio* chain confirm the gap between the consumer's self-reported willingness to pay and actual purchase of organic products. Many expressed concern that the 1998 premium on milk, 35 per cent, was a critical inhibitor. Surveys often show up to 50 per cent premiums on organic food in Norway, despite evidence that the 30-40 per cent of consumers expressing interest in such products are only prepared to pay ten per cent extra (Wandel and Bugge, 1994, p.2). This situation is shared with 'country-of-origin' food, with only 35 per cent prepared to pay ten per cent more for 'safer' Norwegian produced food, declining to only ten per cent willing to pay a 25 per premium. This is despite the strong consumer belief in the safety and general quality of Norwegian food.

The gap between consumer attitudes and actions can be explained when perceived personal costs act as a moderating factor between moral attitude and intention to purchase organic products, according to Danish researchers Thogersen and Andersen: 'consumers who feel that the purchase of (expensive) organic products pose a moral dilemma to them are generally aware of the dilemma and willing to admit that it influences their purchase intensions. However...when reporting intentions they are not able to imagine – or willing to admit – the full impact of the costs considerations on their behaviour' (1996, p.190).

However, the difference between perceived price and real price also needs to be considered. There is a strong perception that food is too expensive in Norway despite the fact that consumers use only 13 per cent of their income for basic foods, substantially less than a generation ago (Large Producer, 1998). One reason for this perception is the rapid growth in consumption of other goods and services, including entertainment and holidays, which has resulted in a decline in proportion of total expenditure on basic needs. In 1981 the average household spent 16.4 per cent on food but only 11.6 per cent by 1993 (Rensvik, 1996, p.20). The percentage of income spent on basic food has markedly declined in the last two generations across all industrialised countries. During war conditions in the early 1940s, it was widely accepted to be between 30-40 per cent.

It is precisely the experience of severe food shortages during war occupation or blockades that has made Norway determined to pursue 'food security' policies by maximising its capacity to be as self-sufficient as possible in food. One of the reasons why domestically grown conventional food has been heavily marketed under the *Godt Norske* (Good Norwegian) label since 1995, is the hope that the importation of either cheaper conventional food or organic products will be avoided. Many conventional farmers fear that if demand for organic food continues to exceed supply, then imports from Denmark and Sweden will be allowed (Large Producer, 1998). In addition, because Norway is outside the EU there is no motivation on the part of large producers for export-driven growth in organic food production, unlike Finland or Denmark (Large Producer, 1998).

Debio labelled ecological milk has been competing directly with conventional milk promoted under the *Godt Norske* label. Many Norwegian consumers perceive the products to be of similar quality, with similar attributes, so paying a higher price for *Debio* milk offers no benefits (Retailer, 1997). Further reinforcing this perception is the marketing of food by most retail chains on the basis of price discounting alone. A check by the author in 1997 of the extensive advertising occurring in Norway revealed consumers would only save an average of 5-7 per cent on discounted items over a two month period. However, such price

competition between retail chains may add to consumers' belief that basic food utilises a higher proportion of the average household's budget than it actually does.

We have seen that 'green' marketing has identified youth as one of the prime target groups. But the marketing of ecological food to younger consumers may be a risky strategy as a SIFO survey indicates that despite increased disposable income, the youngest age groups respond the strongest to the 'discount concept'. Youth seem to be unconcerned about the lack of variety available with frozen or ready-to-cook products in discount stores and these retailers further encourage selection based on 'average taste'. Both youth and older consumers accept this marketing. Rather than choosing on complex quality attributes, youth support discount stores because they are 'economising and rationalising the process of shopping' (Wandel and Bugge, 1994, p.2-3). This may help explain why these stores generally do not stock *Debio* products: 'freedom of choice has been reduced ...forcing the rest of the retailers to omit more marginal parts of their range...and represent a problem for the food industry regarding the introduction of new products' (Jacobsen and Dulsrud, 1994, p.2).

Finally, the strong message behind the *Godt Norske* campaign, backed by government, industry and research organisations, is that Norwegian food is 'good enough' as it is and food must become cheaper, not more expensive. This politically sourced position is, ironically, reinforced by further calls to liberalise the market in Norway and allow more food imports. The high support by young Norwegians for political parties advocating 'free trade' may place the strategy of promoting 'safe quality' through *Godt Norske* at risk too. Only one third of consumers under 30 years believe that trade and food imports will increase food hazards for Norwegians – compared to nearly three quarters of the oldest consumer group (Berg, 2000, p.4).

The situation where government is promoting quality and trust, yet at the same time cheap food, is seen as contradictory by some of the actors interviewed. The paradox is partly the result of the government preferring ecological food to remain only 'a niche as they push for more intensive production for quantity and lower prices' (Small Producer, 1997).

4.5 Availability of supplies

One of the main external barriers to consumer demand for ecological food is adequate supply, which inhibits access to options and thus opportunities to act. Low and irregular

supply of *Debio* labelled products is a major cause of constrained demand, according to most of the chain actors. They believe that consumer demand is not being satisfied and infrequent availability limits the potential for regular purchase of daily items such as milk.

Supply constraints are a result of complex interactions between government policies and institutional structures involving agricultural producers, processors and retailers. One important cause is the fear of competition from imports of both conventional and ecological food, due to any increase in consumer concerns about food safety. Several of the actors are worried that direct comparison with the higher supply levels for organic food in Denmark ignores that country's smaller geographical size and higher population density which makes market access easier. However, the structure of the Norwegian agriculture industry itself, 'where processors have a near monopoly and are reluctant to market organic alternatives' (Consumer Advocate, 1999), could be an equally important factor. Not all of Norway's organic milk reaches the consumer as more than a third is mixed in with conventional product due to a lack of certified processing plants (Large Producer, 1998). This situation may have prompted many potential ecological farmers to reconsider conversion as the rate of farms converting to organic production fell in 1998 from an average increase of nearly 30 per cent a year since 1991. Because it costs the dairy farmer approximately A$0.80 more per litre after subsidy support to produce ecological milk, 'that is a considerable financial loss' (Large Producer, 1998). In 1997, the Ministry of Agriculture modestly set the target that 75 per cent of all organic milk produced would be actually packaged, under the *Debio* label, by 2003 (Retailer, 1997).

According to the processor interviewed, retailers are blocking the availability of *Debio* milk in many stores because it takes away limited shelf space from the faster selling conventional products: 'The logistical problem of stocking ecological products is the store's decision, not the wholesaler's (Processor, 1998). It was observed that *Debio* milk was placed well away from conventional milk in most supermarkets that stock it, encouraging habitual purchases to continue. However, discount retailers, such as Stein Erik Hagen's *Rimi* chain, 'would stock ecological products if supplied in larger volumes and regularly' (Large Producer, 1998).

No actor, including *Debio* itself, expressed confidence in the likelihood of supply ever meeting demand, nor in how fast demand itself would grow in Norway. The Ministry of Agriculture's second action plan for ecological food production (2000-09) aims to achieve ten per cent conversion of agriculture. However, the Ministry also suggests that more marketing is required as supply is 'accelerating faster and will soon overtake demand' (Large Producer, 1998).

The situation may also be prompting retailers to abandon reliance on organic foods as the main direction of marketing the environmental credibility of their stores. Due to supply problems, a new target of sourcing 90 per cent all food from Integrated Production methods (including accepting that nearly half will have to be imported) has been set by the leading ecological food chain in Norway (Retailer, 2001). However, even though some stores have reported a decline in demand for fresh organic foods, this retailer believes they will continue to stock *Debio* products to ensure that reliability of supplies does not become a factor to discourage consumers.

The question of price determining demand and, therefore, supply, remains the main issue for most actors in the *Debio* product chain. Researchers confirm that many farmers in the Nordic countries fear that consumers will not pay for food with reduced chemicals and that the surveys reporting positive attitudes by consumers are not reliable and 'in the end they will be let down by the consumer' (Thogersen and Andersen, 1996, p.181).

4.6 Roles of other key actors

This section examines how actors see their own and others' roles contributing to the relatively low demand for ecological products in Norway, particularly for *Debio*-labelled milk.

4.6.1 Government

Government is seen, not surprisingly, as a key actor, mainly due to its capacity to regulate agriculture and, to a lesser extent, the quality of information communicated through marketing claims. It can also actively support the principles of consumer and citizen 'right-to-know' through legislation and the use of information tools and education by its various agencies. However, it is through its influence on infrastructure, via regulatory and economic policies, such as protecting Norway's agriculture sector from imports, that government influence on supply extends to demand, as it shapes social norms towards food consumption patterns. As noted in the previous chapter, political calls for increased private consumption have been criticised as 'negative' or contradictory signals for long-term sustainability. At least one *Debio* actor made a similar point by suggesting that such signals raise the 'old debate over development versus the environment, preventing new information being received by consumers' (Small Producer, 1997).

Government intervention through 'perverse' subsidies distorts the market prices and undermines environmental goals (Ytterhus and Lillehagen, 1997, p.17). Linking subsidies to maximise yeilds has resulted in high use of fertilisers. Conventional food production in Norway received nearly all of the A$2.4 billion of state support for agriculture (MoA-Norway, 1998, p.12), making it the most subsidised after Switzerland according to 1997 OECD figures, covering 70 per cent of production value compared to 16 per cent in USA and only three per cent in Australia (*Aftenposten,* 17 July 1997). Meanwhile, compared to most other Nordic countries, Norway has introduced smaller incentives to overcome agricultural environmental problems, which on the Ministry of Agriculture's own accounts are mainly 'discharge into local watercourse and the sea due to over extensive use of fertiliser, soil erosion and use of pesticides' (Daanmark, 1997, p.5). Total consumption of pesticides has not fallen since 1991 (Statistics Norway, 1999, p.149). Although the benefits of ecological farming would directly help resolve these problems and maintain employment in rural areas, government support for conversion has been markedly slower and smaller than in other Nordic countries.

The continuing flow of subsidies for conventional farming in Norway contrasts with that in Germany, where in early 2000 (after the BSE and foot-and-mouth crises), a newly combined government portfolio of agriculture and consumer protection began re-directing all subsidies towards organic or Integrated Production (IP) farming (Naturland, 2001). In Norway, the emergence of government support for ecological food production was initially linked to the need to meet consumer demand for sustainable agriculture: 'To maintain a competitive agriculture it is necessary to keep the consumer's confidence in the products sold' (Daanmark, 1997, p.11). According to the Ministry of Agriculture, any continuation of development of organic farming will be linked to consumer purchasing habits (MoA-Norway, 1998, p.13).

The strong Norwegian tradition of state involvement in industries has led to the institutional structures in agriculture being described as 'the last Fordist approach' where monopolies exist because 'politicians want to ensure cheap food supplies' (Reinert, pers. comm. 1997). The upper price limit is fixed by parliament annually and imports are only allowed when this limit is exceeded. The farmers' organisations and processors involved in these negotiations accept that the government guarantee for the maximum price can not apply to overproduction. However, the subsidies for dairy and meat processing monopolies still result in 'marketing structures that are quite big and immobile' (Johnsen and Mohr, 2001, p.7). The dairy processor, TINE (Norwegian Daries), still has over 95 per cent of the market despite 'official' competition since 1996. The irony is that while such policies seek to

supply adequate, cheap and safe food, Norwegian consumers continuously shop in EU Sweden, especially for cheaper meat. The protectionist polices for Norwegian food could suggest little government faith in consumer choice based on quality rather than price. At the same time, it remains uncertain whether a further liberalised market will see demand for environmentally responsible products increasing.

In contrast to the high international profile on other environmental policies, the efforts of Norwegian governments in regard to environmentally sound food choices have not been very strong. Consumer education is relatively low-key and is not a core component of formal environmental education curricula. Non-formal information campaigns are effectively left to NGOs and informal learning opportunities through the media and social networks, further distancing the government from leadership in public debate over food consumption issues.

However, despite reluctance by some Norwegian consumers to pay higher prices for domestically grown food, the large-scale information campaign by the Ministry of Agriculture for the *Godt Norske* label has been accredited with market success. According to the large producer interviewed, *Godt Norske* has encouraged public and private purchasers to prefer Norwegian food to the 'imported products with increasingly questionable health risks' (1998). The campaign, although judged successful, had its first advertisement reported to the Consumer Ombuds for implying that its products were using higher targets than already existing standards for reductions in pesticides and fertilisers, thus entailing 'the omission of important information required by the consumer to make their own correct assessment' (Enger, 1997, p.12). The *Godt Norske* campaign aims to 'remind' Norwegians of the need to maintain viable domestic production in the face of cheaper imports (Consumer Advocate, 1997). With the small farm structure of Norwegian agriculture 'at risk', the 'quality argument' has extended to quarantine and GMO issues because these 'will undermine the long-term quality and viability of Norwegian food supplies (Small Producer, 1997).

A former Norwegian Agricultural Minister reportedly criticised farm organisations which have 'remained passive' in light of consumer demand for ecological food (*Nationen,* 16 April 1998). Yet actors in the *Debio* chain had another view. The large producer (1998) considers that the Ministry of Agriculture itself could provide more advisory services and the small producer (1997) believes the Ministry is prepared to let consumers take responsibility for driving change. The consumer advocate expressed concern that most support from the same Ministry goes to *Godt Norske*, leading to 'a contradictory and confusing situation for consumers' (1997). *Debio* itself noted that while Denmark and

Sweden had set early targets for ecological production 'Norway does not dare to fix a goal yet' (1997).

4.6.2 Business

The increasing scale of integration in the food supply chain (involving politicians, growers, processors and retailers) affects the analysis of the market, including the determination of prices. The market structure in Norway has undergone a 'revolution' since the late 1980s, with both the manufactures (processors) and retailers becoming concentrated. The top three retail chains control 75 per cent of the market and horizontal integration influences wholesalers, to the extent that retailers have 'countervailing power to confront the big monopolistic food producers' (Jacobsen and Dulsrud, 1994, p.2). Yet the vertical integration is causing some long-term concerns, especially with fresh products: 'There are reasons to fear a closure of the distribution channels and the effect this may have for entry possibilities and for the range of variation in grocery retail' (p.2). In addition, there have been accusations of price fixing of conventional cheese by the dairy processor in favour of the discount chain *Rema*, which has, coincidentally, a very low profile for ecological products (*Norway Daily*, 2 March 2001).

The relationships between the processor/wholesaler and retailers appears to be the most sensitive and complex one in the *Debio* milk chain, with direct implications for the communication of environmental information to end consumers. Both the processor and large producer stated open reluctance to see demand for *Debio* milk reducing the market share of conventional products, fearing that bigger demand would force costly changes in supply: 'Ecological milk is needed to be differentiated but not at expense of conventional milk' (Processor, 1998). Using marketing budgets to identify commitment by actors in the chain raises interesting issues. According to the retailer, their own marketing commitment to promoting ecological food is not being matched by the processor who allocates only a minimal budget for marketing ecological dairy products (Retailer, 1997). The processor claims, however, that their budget for *Debio* milk is 'relatively larger; ten times per litre more than conventional milk. Overall the sum is small but you need to go over a threshold to get returns first and where that is, we are not sure' (Processor, 1998). However, no target for market share was disclosed for either the initial release of organic milk or for its relaunch in 1998. *Debio* itself believes that the processor has been advised by internal marketing staff to avoid any big campaign, as supplies would not be able to keep up with any rapid rise in demand (1998).

The processor believes that the price barrier is the main marketing obstacle. While they understand the internalisation of environmental costs in the price of ecological milk – and pay farmers slightly more for it – the retailers are not informing consumers: 'it's not communicated into the market...as retailers have chosen to concentrate on unique selling point. Our marketing and advertising bureau understands this and says it can be about the advantages of ecological products but not with any statement about conventional food' (Processor, 1998). The 'defensive' position taken by all the industry actors in the *Debio* chain exposes a communication 'weak link' regarding at least one key sustainability concept - the internalisation of environmental costs.

The lack of consumer environmental knowledge as an outcome in the general food product information chain is an overall weakness. According to Hille, the denial by Norwegian natural resources-based industries (including forestry, fisheries and agriculture) of environmental problems is due to a desire to have a strong 'clean green' image for exports (2001). The result is a 'disconnected' learning process along the supply chain and internal 'green walls' within some organisations. Both factors would make the task of a retailer trying to educate consumers that much more difficult. According to the retailer interviewed, that organisation's own marketing professionals say it is 'too hard' to communicate the environmental and social benefits of longer-term changes in consumption and production. It is also a 'big challenge' for some store employees who resist training and learning about ecological products: 'they say, "we have too much to do already" and cannot understand why the organisation should be doing this better than average and that this training "costs too much"' (Retailer, 1997). Although the ecological food training program cost the Cooperative chain A$0.3 million in 1997, it was partly subsided as the initial four-hour courses were operated by the GRIP Centre which is funded by the State Pollution Control Authority (Ministry of Environment).

4.6.3 Research community

Some of the interviwees expressed indirect criticism of research undertaken by government and business, implying that it was poorly integrated and contributed little to consumer understanding of the linkages between environmental and health issues. The steady stream of research studies reported in the Norwegian media reinforced consumer confidence in Norwegian produced food but do not openly discuss broader sustainability issues. A SIFO study found that Norwegian consumers increasingly believe that science will solve environmental problems 'without leading to great changes in lifestyles' (Nyberg, 1999, p.17). However, there remain considerable communication barriers and mistrust about

science and technology in relation to biotechnology and GMOs in the food chain. At least one actor considered that insufficient consumer research to guide sustainability strategies was occurring (Consumer Advocate, 1997). The 'disquiet' among the NGO actors was similar to concerns raised by the EU conference 'Food Chain 2001', hosted by Sweden, which focussed mostly on 'what industry and government actors needed to know about consumer perceptions' rather than on 'what consumers need to know about the food chain' (*KRAV,* 2001). According to the processor in the *Debio* chain, 'as long as consumers have the belief that Norwegian agriculture is clean then it is not something we can or should do anything about...as long as agriculture continues this way' (1998).

The consumer advocate saw the situation being made more difficult by some health professionals. The nutritionists took a 'defensive' view that only 'traditional' information about immediate safety and health risks of 'poor quality' food should be communicated to consumers rather than the Consumer Council's dissemination of information on longer-term matters, such as sustainability (1997). This situation created barriers in research cooperation, sent confusing signals about health to consumers and encouraged some actors to believe that consumers are already too overloaded with information. Yet, the Consumer Council itself has come in for criticism for 'wasting time to monitor which supermarkets are the cheapest' (*Dagens Naeringsliv*, 23 February 2001).

Within marketing professionals, it appears that the consumer research undertaken reflects little concern for consumer competency levels about sustainability issues. Minimal attention to resolving the gap between environmental attitudes and actions is given, while the focus of most organisations remains on the 'niche' segments of existing 'green' consumers. This view has been found in other Nordic countries and indicates that more research into choice theory concerning food may be needed (Pantzar, 1996, p.17). For example, no market research to check the accuracy of youth understanding of environmental and health issues was done: 'we just rely on official sources' (Processor, 1998). Even though it was known that 'worry about the environment among youth is the highest but personal engagement is the lowest' little investigation into the effect of knowledge on youth attitudes and confidence occur because researchers say 'it's very complex' (Consumer Advocate, 1997).

4.6.4 Media

The role of the media in communicating information is seen unfavourably by many Norwegians. A SIFO survey showed that information concerning links between food, health

and the environment are represented through sensational headings and 'extreme points of view'. The opinions presented by such media stories are also often 'un-representative' and damaging to the credibility of the original sources (Bugge, 1995, p.17). Some actors suggested that confusion is also generated by new and often contradictory research findings. However, generally, the level of background facts to stories observed in Norwegian daily print and electronic media has not yet reached the 'lowest common denominator' in audience capabilities as has occurred in Australia.

The depth of analysis over critical issues may not be as much as in some other Nordic countries. The diversity of media ownership in Norway is seen as often ineffective in raising new issues because 'intense competition and the closeness of society meant that they follow each other' (*Debio*, 2001). According to Hille (1998; 2001), more serious debate on sustainable consumption occurs in Danish newspapers, possibly due to closer scrutiny of political leaders by the Danes who remain wary of the EU, despite their membership of it. This results in a stronger accountability role by the media and more transparent and 'clearer' communication by politicians. Meanwhile, in Norway it is the far-right Carl I Hagen who is widely acknowledged as the 'master of the tabloid'; and he consistently dismisses sustainability issues.

4.7 Marketing and labelling

4.7.1 Limited marketing of organic products

The extent that the information tools of marketing and eco-labelling inhibit informed choice is an area of interest to all actors in the *Debio* chain. Some actors describe the situation as being constrained and question the effectiveness of the marketing of *Debio* products, especially milk. With a small marketing budget, *Debio* must rely on community networks, such as the *Environmental Home Guard*, because the processor does not wish to 'push demand and create anxiety about normal milk' (Consumer Advocate, 1997). Retailers generally are criticised for 'a rather poor environmental profile and effort to date' (ENGO, 1997). However, it is understood the effort of the only chain marketing organic food (Cooperative) is hindered by a smaller budget compared to the discount chains. It also follows a 'sensible but slow' strategy to get training and procedures in place 'before marketing and boasting' (ENGO, 1997).

Most actors believed that 'niche' marketing provides consumers with insufficient access to environmental and health information about food products. The dissemination of knowledge through marketing may be constrained, however, by the increased use of expensive electronic advertising in Norway, especially since the advent of commercial television in the early 1980s. This could be reinforcing the 'brand image' approach taken by marketers who advise organisations that 'facts-based advertising would be "old fashioned" and would not sell any more these days' (Heiskanen *et al.,* 1998, p.75). The advertising budget for ecological milk has been small ever since its introduction, with neither retailers nor processors giving it a higher profile, for such reasons as: it is 'only one percent and a small niche'; individual stores need to give space to advertising big volume selling items; and stores tend to regard 'promoting ecological food as more about value strategy than economic strategy' (Retailer, 1997). *Godt Norske*'s advertising budget by comparison is much higher, although no actor could supply details. It was also observed that the launch of 'novelty' or new conventional product lines by the processor receives considerable more advertising than *Debio*-labelled dairy products.

The repeated re-launching of *Debio* milk by the processor indicates that the marketing of organic products has been more about 'symbolic images' than concepts such as life cycle assessment (LCA). Three different packages were used for *Debio* milk between 1995-2000. The first version was based on market research indicating that 'recycled and brown colours' related well to the consumers being targeted: 'high awareness segment of consumers – the small niche who would see clear signals' (Processor, 1998). But 'then we realised later that expressions for ecological values didn't have to be exactly like this, so the design bureau brief became to make ecological more appealing to reach a broader segment of the market' (Processor, 1998). This could partly explain why, just after this first marketing drive, sales actually fell from the initial five percent to just 1.5 per cent (*Debio*, 1997), requiring two more launches before recovering in 2000.

With the second relaunch in 1997, a full-colour version of the earlier design was used. 'Family farm branding' was retained, but with less reference to 'ecological' and a smaller *Debio* label. In 2000, the third version completely abandoned any distinguishing design from the conventional milk lines and used similar abstract patterns. While the word 'ecological' became far more prominent, it was also incorporated into the company's (TINE's) own logo. TINE has argued that by not looking 'too alternative' the package has helped sales double in the first few months (*Debio,* 2000). The printed brochure distributed for the relaunch also abandoned images of farming landscapes, animals or people, replacing them only with generic, 'pure, wild nature' fjords, rivers and mountains. The text accompanying the emotive

images began with 'Is not all common Norwegian agriculture good enough? Yes, absolute.' (TINE, 2000). No scientific basis for consumers to differentiate between the ecological and conventional agricultural products was provided. In other brochures, both *Debio* and *Godt Norske* show 'contented' cows in very green and clean pastures. The similarity may be not be coincidental. *Debio* believes that the processor's marketing of organic milk has avoided those characteristics not shared with conventional milk, such as 'environmental quality or a future focus' and, as a result, 'consumers in the shop just think of physical attributes' (1997).

Country-of-origin labelling has also argued for 'consumers have the right to information which allows them to make informed choice' and that such labelling helps overcome the lack of 'first-hand information' (Bjorkum, 1999, p.1). But with *Godt Norske*, there is no environmental information provided because 'consumers now think that Norwegian agriculture is clean, pure, healthy and sound, to both own health and to nature' (Processor, 1998). It appears it is *Godt Norske*, rather than *Debio,* that has successfully used a proven formula for helping consumers simply evaluate products, namely by promoting brand loyalty (the consumer's own country) and credibility (the informant and supplier is the farmer, endorsed by a trusted government).

The issue is that neither label provides meaningful and relevant information about their criteria. *Debio's* criteria are not known by most large institutional buyers (such as schools and hospitals) or by most consumers: 'they don't know what it really means, especially with the product's impacts on the environment' (Retailer, 1997). While *Godt Norske* only infers its environmental attributes, it carries a 'semi-official' status via its extensive support from the Ministry of Agriculture.

In a SIFO study, only 11 per cent of consumers could identify the *Debio* label. However, although many more 'purchased and ate ecological food', suggesting that they saw the word 'ecological' on a package, obtained information direct from the retailer or simply 'misunderstood another label' (Torjusen *et al.,* 1999, p.32). Another SIFO survey in 1997 showed that while only 14 per cent could identify the *Debio* label, 85 per cent said they would be prepared to trust it. However, fewer consumers would pay a premium for organic milk; a nine per cent decline than reported a year earlier. The survey showed a hardening of the price barrier and that 'the public's widespread familiarity with environmental labelling does not extend to the seal of government approval for ecological food products' (Nyberg, 1999, p.18).

Even in the leading organic market of Denmark, only 43 per cent could identify the state seal label (Thogersen and Andersen, 1996, p.191). The poor level of recognition of eco-labels for food, compared to the *Nordic Swan*, suggests that consumers' level of instrumental knowledge for distinguishing between ecological and conventional products is low. When coupled with a lack of opportunities caused by irregular supplies and low visibility in shops (which itself reinforces the perception of poor availability), ecological food faces significant hurdles.

A Swedish public survey showed that 70 per cent of consumers still lack enough information on the *KRAV* eco-label and on ecological farming. They do not understand the criteria behind the label, nor the 'cradle-to-grave' and 'environmental consequences' of the products (Kallander, 2000, p.13). But the issue of how much information consumers actually use or trust remains: 'Labels can never educate the population to a level where they can judge from the declaration of contents...most people need a symbol for fast decisions. Even if the criteria behind such labels are understood by only 0.1 per cent of the population, knowing that the government and environmental NGOs support it is enough. But the day the environmental movement says the *Nordic Swan*, for example, is nonsense, then it is out' (ENGO, 1997).

4.7.2 Price-based marketing

The pricing system used to set the premium along the chain is a critical factor in marketing. In 1997, the Ministry of Agriculture optimistically believed that a sufficient number of consumers would pay a 20-25 per cent premium for ecological food, although no target for market share was provided (*Aftenposten,* 17 July 1997). According to the Norwegian Consumer Ombuds, many consumers think that 'environmental arguments in marketing are used to price the product higher' and that 'there has been an oversell of environmental argumentation, with too much noise and too little content' (Graver, 1995, p.429-430). *Debio* milk sold for 35 per cent more until 2000 when its premium was reduced to around 20 per cent. However, the milk processor says it is not responsible for high price premiums as it makes the same flat profit from both product types. Instead is suggests that the cause for excessive premium prices lies with the retailer: 'stores use milk to bring people in on the basics but ecological milk offers the largest profit' (1998).

The Cooperative retailer originally discussed closing the price gap temporarily to build up demand but as *Debio* products were 'small categories', it was decided to price by fixed kroner rather than percentage. Unlike in Denmark, there was no policy to temporarily lower

prices for organic foods over 1-2 years to increase demand - even though 'it worked' in that country but 'maybe because the government took a role' (Retailer, 1997). By 1998, however, the Norwegian Cooperative chain decided to set its profit margin as a flat rate rather than a mark up percentage (Retailer, 2001).

Of particular concern is the lack of research into how most advertising signals encourage consumers to expect cheaper prices for food: 'it's a big problem and is driving the positions of industry and consumers' (Retailer, 1998). One reason why price may be such a dominant marketing strategy in Norway, is that the retail buyers themselves appear to perceive little difference between ecological and conventional food products. The choice becomes one between two in-distinguishable 'brands' of *Debio* and *Godt Norske* labelled products that are competing simply on quality criteria. According to *Debio*, the problem is over-reliance on eco-labelling to inform and educate the consumer, with marketing campaigns for ecological food being 'confusing for the consumer' (Johnsen and Mohr, 2000, p.3). Further, marketing by the only retail chain promoting ecological food is muted as it fears criticism if its 'ecological credentials' are questioned: 'we have to be ready inside the organisation before we go out and say ourselves that we are the best' (Retailer, 1997).

Decision-making and willingness to act are related to price, supply assurances and also to level of perceived responsibility. Given the predominance of marketing signals about cheap food, the perceived economic cost is a major barrier for any product emphasising quality, including *Godt Norske*. Only one third of Norwegian consumers are prepared to pay a ten per cent premium for Norwegian produced food over imported products (Wandel and Bugge, 1994, p.2). For ecological food the threshold is more difficult. Most *Debio*-labelled products observed in shops between 1996-2000 carried between 30-60 per cent price premiums. According to a 1996 survey, 70 percent of consumers would pay a five percent premium for organic food, with only ten per cent accepting a 25 per cent premium. If the price difference was only ten per cent, nearly 40 per cent of consumers would choose ecological food (Wandel and Bugge, 1996, p.23).

In Iceland, the fear by producers that consumers will not pay for the cost of organic food gives support for a 'quality assurance'campaign to strengthen the domestic competiveness of local, conventional produce (Aform, 1999). Despite the advantage of the portfolios of agriculture and the evironment being held by the same Minister, and the goal of making iceland 'the world's first country to guarantee that all its agricultural products are farmed sustainably' (MoA-Iceland, 1999), organic farming is constrained by the cost of abandoning pesticide and herbicide use. The absence of GMOs, antibiotics and hormones in the food

chain has instead become the essence of communication that Icelandic food is 'natural, wholesome and pure' (Aform, 1999).

4.8 Weaknesses in the 'informed choice' process

4.8.1 Competency levels

In Norway, the flow of environmental information to consumers about food production processes and product attributes appears confined to the *Debio* eco-label. Very little information is communicated in other food marketing that could be described as adding to the environmental or sustainability 'literacy' levels of mainstream consumers. Absent is any basic analysis for costs and benefits of food choices, including: the costs of ecological impacts or risks to human health; the benefits of organic products compared to other products, or; the ecological principles or science-based concepts as used in *The Natural Step*. Instead, physical attributes, such as appearance, are used 'as an indicator of other quality properties and may be valued by consumers in the absence of other good information channels' (Wandel and Bugge, 1996, p.25).

With consumers perceiving little environmental damage from Norwegian food, any uncertainty about 'environmental contaminants' is mostly confined to imported food (Wandel, 1997, p.22). However, there is no communication of the consequences of imports on the environment or food security of the exporting countries, nor of the 'hidden costs' of excessive food consumption in industrialised countries. As far as Norway goes, 'only a small percentage of consumers know the science behind sustainability issues. Most rely on the media, politicians and the NGOs for knowledge on bigger issues' (ENGO, 1997). As a result, consumers do not buy ecological food because they need 'higher knowledge' to understand the environmental argument about benefits (Processor, 1998). Another actor takes a different view of competency: 'people don't have a scientifically sound way of thinking about ecological food' but have 'intuition that it's intelligent to eat food from your surroundings' and they understand the 'short travel' concept from farm to plate (Small Producer, 1997).

Unfortunately, marketers along the *Debio* chain do not monitor conceptual knowledge levels in consumers and minimal research is made into why consumers are *not* making informed choices on sustainability grounds. There is no systematic monitoring of 'basic sustainability literacy' on the part of Norwegian consumers, despite surveys showing a decline in general

awareness of sustainability issues since the early 1990s (ENGO, 1997). Although concerned at the low capacity of consumers to understand sustainability messages, actors rely on attitude surveys and assumptions of consumer knowledge levels. The only actors to indicate an awareness of their roles as educators of consumers were the environmental NGO, the consumer advocate and the retailer.

All actors in the *Debio* chain indicated that the competency of the consumer to make informed choices is unknown at best and poor at worst. Yet, as Thogersen and Andersen point out, abilities, including knowledge of ecological food production, are as important as opportunities to purchase (1996, p.181). More importantly, inability to differentiate between alternative products can prevent attitudes and intentions to purchase from being followed up.

4.8.2 Consumer information needs

Most *Debio* actors remain uncertain about how strongly consumers want more environmental knowledge. Surveys show a strong desire by Norwegian consumers to be informed about the environmental and human health hazards in non-food products, indicating a need for information 'probably greater than can be met by existing labelling schemes' (Tufte and Lavik, 1997, p.15). However, the same SIFO survey showed consumers wanted information to be made far simpler, preferring symbols to text and possibly 'grading or points allocation' about the consequences rather than 'technical' declarations about a product's ingredients. With ecological food, there is little background information of this kind supplied to consumers.

The situation suggests a significant case of 'unarticulated needs'. Some actors express frustration at the situation: 'Policy says that Norway should have products that consumers want and we don't know exactly what consumers want' (Retailer, 1997). The actors generally appear to be 'in the dark' on how to improve consumer abilities. There is a need for more in-depth research on how consumers perceive and assess ecological food, according to Torjusen *et al.,* (1999, p.30).

Environmental knowledge is not being used in decision making about quality and performance of fruit and vegetables, where taste and freshness are the highest priorities, followed by appearance, nutritional value and, lastly, ecology (Wandel and Bugge, 1996, p.25). With twice as many consumers choosing *Debio* milk on health rather than environmental grounds, such purchasing 'does not imply environmental awareness on the part of the consumer' (Nyberg, 1999, p.19). As some actors pointed out, it is important to

remember that milk, as a 'daily' food, involves limited decision-making and habitual influence can be very strong when there is an absence of external information to guide changes in routine purchases: 'Consumers perceive ordinary milk as 'ecological' and food, in general, is not an important issue' (Small Producer, 1997). The question that should flow from this is whether it is possible for consumers to make informed choices about products generally, if 'basic food' choice is not being influenced by knowledge.

Although the majority of Norwegian consumers believe there to be little information available about 'what is good for the environment' with regard to food (Torjusen *et al.*, 1999, p.32), all *Debio* actors expressed uncertainty about how much knowledge is required before consumers become sufficiently competent to make informed choices. However, they felt that provision of labelling criteria, explanations of marketing claims and reasons behind pricing, would at least assist (see Table 4-6). Even though many actors saw a need to equip consumers with the ability to compare alternative products, direct alternative product comparisons in advertising (as practiced in Australia and some other countries) would not be 'allowed' in Norway (Debio, 2001).

Table 4-6: Consumer needs for more detailed information

Actor	**Debio**	**ENGO**	**Large Prodcuer**	**Small Producer**	**Processor**	**Retailer**	**Consumer Advocate**
Consumer needs for more information							
Labelling criteria	M	H	M	H	M	M	H
Marketing claims explained	H	H	M	H	M	H	H
Alternative product comparisons	H	M	L	M	L	M	H
Product declarations	M	M	L	M	L	L	H
Nutritional information	M	M	M	L	L	L	M
Production date	M	L	M	M	L	L	L
Differences in physical attributes (appearance, taste etc)	H	H	M	H	H	H	H
Reasons behind pricing	H	H	M	H	H	H	H
Country of origin	M	M	M	M	L	L	L

H=High, M=Moderate, L=Low (or not mentioned) weight of views of actors

The question therefore becomes, are there consistent and solid capacity-building strategies for informed decision making? It is difficult to determine this in the absence of information on what is being measured, but many actors implied that the tools were not helping to expand consumer understanding of the pricing mechanism for ecological food. A minimal attempt is being made to communicate conceptual knowledge about sustainability, especially

consumption patterns, along the *Debio* product information chain. Observation showed that little additional environmental information about food is provided to consumers by the Ministries of environment, agriculture, consumer affairs or health. Technical information on production and processes appears to flow between processor and retailer, but is single issue focussed.

There appears to be very limited recognition by actors that 'consumer education' could be used as a quality standard or performance indicator for marketing and eco-labelling. This situation was reflected in one actor's view that, while most consumers know that ecological food costs more, it is 'kind of old fashioned and doesn't maximise what you can get out of soil and animals...and in the end, price and knowledge is not something we can do anything about' (Processor, 1998). Such a perception seems to disregard the need for proactive marketing: 'where a green premium pricing strategy is being used it should be linked to marketing communications efforts to inform and educate the consumer' (Peattie, 1995, p. 285).

The following is a summary of where, why and how gaps in information flow along the product chain.

a) Labelling

Dual labelling schemes exist, with the *Godt Norske* symbol confused by consumers as a competitive 'quality mark' to distinguish those products from 'similar' *Debio* products. If consumers are to have sufficient instrumental knowledge to use eco-labelling, a better understanding of labelling criteria will be needed.

b) Marketing

Credible sources of information are being used by *Debio,* but may be unintentionally reinforcing a 'niche' perception of consumer demand by other actors. Knowledge of product attributes and opportunities for purchasing needs to be increased.

Other information methods and channels (such as in-store promotions) are limited to one chain of retailers and both formal and informal learning is limited.

4.8.3 Actors' responsibility for learning obstacles

Who, then, is responsible for hindering the flow of quality information to consumers and who has a role in providing consumer education?

This question exposed a broad 'blame game' along the entire product chain. The actors generally identified the processor and retailer as playing critical roles in blocking the flow of knowledge to consumers (see Table 4-7). It was only the processor who considered they did not have responsibility for supplying further information. Both the processor and *Debio* itself suggested that, because they do not know each other's marketing strategies, any synergy of effort to educate consumers was impossible. The processor felt that all retailers should help develop the market more, instead of 'complaining too much about too many products' (1998). The producers, to a lesser extent, also suggested retailers, processors and government were responsible. The environmental NGO saw all actors as 'weak links' with government and retailers providing the best potential for improvements. Generally, responsibility to inform consumers, provide information and empower mainstream consumers does not appear to be fully internalised by most actors, especially on the supply side. The reliance is more on the end-consumer to make decisions with what limited information is available.

Table 4-7: Actors' responsibility for consumer education

Actors	**Debio**	**ENGO**	**Large Producer**	**Small Producer**	**Processor**	**Retailer**	**Consumer Adocate**
Recognition of responsibility to educate the consumer							
No issue	L	L	L	L	L	L	L
Government (externalise)	H	M	H	H	M	M	M
Personal issue (for consumer or actor, but little faith in results)	M	L	M	M	L	M	M
General issue (all society)	H	H	M	H	M	M	H
Marketing and labelling	H	M	M	M	M	H	H
Other specific actor in chain (especially processor or retailer)	H	H	M	H	H	H	H
Researchers	M	M	L	M	M	M	H
Formal education institutions	M	M	M	M	L	M	H
Media	H	M	M	H	M	M	H
NGOs	H	H	M	M	L	M	H

H=High, M=Moderate, L=Low (or not mentioned) weight of views of actors

4.9 Identifying good practices

4.9.1 Key success factors

Several ways to overcome obstacles to informed consumer choice can be identified from the *Debio* and other organic food chains in the Nordic countries: 'Norway must take note of Denmark and Sweden and how they move forward' (Large Producer, 1998). These factors can help determine the points of leverage for potentially closing the gaps in consumer attitude-intention-action processes regarding ecological food. They can also be considered to be pre-requisites for developing positive relationships between the internal and external key influences on consumer decision making.

The following suggestions for improving informed choice by consumers are hereby made:

a) Motivation

As the values of individual consumers are substantially influenced by socio-cultural norms, when positive attitudes are expressed publicly by authorities and other actors in the supply chain they help consumers maintain demand for environmentally improved products. But no actor in the *Debio* chain indicated a factor identified in Sweden: the existence of 'influential actors' at senior management level, especially in the retail sector, who are 'willing to work hard' for the success of organic products (Heidenmark, 2000, p.142). Another Swedish example is the commitment by the leader of the conventional farmers union to convert his own farm to organic production, which has further encouraged confidence along the product chain (Kallander, 2000, p.7).

Partnerships between trusted providers of information in the Nordic countries, namely environmental/consumer NGOs and the government, help ensure consistency in marketing messages, quality of consumer information and improved confidence by all actors involved.

b) Abilities

Most actors felt that improvements in consumer knowledge and skills would help overcome the barriers of habitual shopping and the perceived economic costs of buying 'ecological'. Making the information search more time-efficient for consumers was especially important. Retailers can provide both pre-visit and in-store product information, while municipal authorities can provide general knowledge about local supplies.

c) Opportunities

Most actors believe that supply must be sufficiently consistent and widely available to allow mainstream consumers to modify habitual purchasing patterns. Access to adequate information, including knowledge about the consequences of food production methods and consumption, is also essential.

In the *Debio* case, the institutional and policy context has emerged as a critical element influencing individual choice. Although actors have different perceptions of what institutional relationships need to exist to facilitate better product supply and flow of information, the following actions by key actors (taken from across the Nordic countries) have been identified.

4.9.2 Government

According to most of the actors, many of the main barriers to effective end-use of information by consumers result from government policies that limit supply and keep prices high for organic products. It was suggested that governments need to take responsibility to educate not only mainstream consumers but also themselves, as institutional consumers. For example, the price barrier has been eased in Denmark by A$10m of annual incentives from the government for the institutional kitchens of local and regional authorities to purchase organic food.

The Danish government also established a unique Council on Organic Food and Agriculture which has served as 'a platform for consensus building on organic policies and has been a catalyst for incentives in every area of organic food production' (Norfelt, 2000, p.6). Denmark has placed far more attention on building consumer demand than on supply, unlike the other Nordic countries, where 'hardly any marketing of organic products currently takes place' (Heidenmark, 2000, p.154). In 1988, the Danish government took an early lead in supporting organic farming because it recognised the 'relatively weak economic position of the ecological association' compared to 'established institutions'. Its 1995 Action Plan for Organic Food also recognised the need to provide better consumer information to build confidence in ecological food products, with the result that 'consumers have acknowledged this investment with increased demand' (MoFAF-Denmark, 1999, p.22).

Although the government has strongly supported supply improvements in Sweden, 'very little support for market development' has occurred (Kallander, 2000, p.6). The lack of

Norwegian government funding for marketing has been regularly criticised by many other actors. This was addressed in 2000 when A$1m was allocated for marketing organic products after a survey showed only 15 per cent consumer recognition of the eco-label (Debio, 2001).

On the supply side, it has been the setting of national targets by Nordic governments for conversion to ecological agriculture that has been the main success factor. The Swedish parliament unanimously adopted a ten per cent target in 1994, which was basically achieved by 2000. Finland increased it's area four-fold at the same time due to a 'clear political will to develop organic production' (Heinonen, 2000, p.12). The Danish have set a total conversion goal, although no set timeline has been given. Such a long term policy goal is serving a similar purpose as Sweden's new 20 per cent target by 2006 - a 'guiding star' for producers - even though funds for consumer information remain small (Heidenmark, 2000, p.154). According to Swedish experience, 'the most important result of the ten per cent campaign has been the change of attitude towards organic agriculture, which nowadays is fully accepted as a serious market alternative' (Kallander, 2000, p.5).

In 2000, the Norwegian government set that country's first supply target of ten per cent conversion by 2009. However, even by 2006 when Sweden hopes to achieve 20 per cent, the average EU area of certified production area will be higher than this target (Kallander, 2000, p.5). Austria, Switzerland and, especially, Germany, are rapidly increasing the amount of farmland converted to organic production. Meanwhile, Iceland has yet to announce a conversion grant scheme, although limited government support for eco-labelling and marketing is provided (Dyrmundsson, 2000, p.5). The *Tun* eco-label organisation expressed confidence that Iceland would eventually obtain such a scheme (Tun, 1999). A possible indicator that ecological farming is becoming more mainstream in all Nordic countries is that the average size of an organic farm is now larger than the average conventional farm.

Interestingly, EU membership may be the most critical factor in differentiating the low-key role of governments in Norway and Iceland compared to the other three Nordic member countries of the EU. When Finland joined the EU, producer income fell sharply, making the EU's short-term subsidies for conversion to organic production very attractive (Heinonen, 2000, p.9). The Finnish situation also suggests that subsidies for ecological farming and access to larger markets have a positive effect on domestic demand. Supply problems made Finnish supermarkets abandon organic food in the late 1980s, forcing them to import and causing farmers to campaign for country-of-origin marketing, similar to *Godt Norske*. However, by 1998 supermarkets were selling half of all the organic food sold in Finland. In

1990, subsidies for conversion to organic farms were introduced, resulting in an increase from 671 to 1,814 certified farms by 1994. But on joining the EU in 1995, and accessing more subsidies and related expertise, the number of converted farms accelerated to over 5,220 within five years (Heinonen, 2000, p.5). According to Katila, 'EU membership has operated as an agent of change in respect to increased acceptance of organic farming by the agricultural policy community' (1995, p.117). Importantly, the Finnish government appears to have used subsidies effectively to intervene in the market pricing of organic products, although not fully covering the increased costs to producers.

In a situation similar to other Nordic countries, Norwegian government support for learning along the *Debio* product chain occurs at three levels:

a) Producers. The Ministry of Agriculture and the main farmers union (NB) offer education courses for producers, although the level of advisory services is higher in Sweden and Denmark, where Europe's oldest organic college was established in 1987 (Norfelt, 2000, p.6).

b) Retailer. The Ministry of Environment supports the GRIP Centre, which operates courses for the Cooperative retail chain (NKL), covering ecological principles and systems thinking similar to *The Natural Step*.

c) Households. The Ministry of Environment supports the NGO, EHG, to 'harvest' the large membership of community-based groups (ENGO, 1997). While this is a good initiative, the food aspects are only a small part of the information campaign.

4.9.3 Industry/producers

The *Debio* actors suggest that implementing sustainability policies in the agri-business sector requires both incentives and changes to institutional arrangements. For example, Norway's situation of having large amounts of unprocessed organically farmed milk has been mainly avoided by creating new distribution channels in other Nordic countries. Processors and wholesalers are key actors in the food chain and, together with retailers, can act as 'ecological gatekeepers' for supply. In Sweden, the cooperative dairies adopted their own 'ten percent target' for organic products in 1994. In Denmark, dairies have undertaken 'large-scale launches' and developed a full range of organic products alongside conventional processed foods (MoFAF-Denmark, 1999, p.18). Meanwhile, in Norway, smaller processors do not receive any government aid (unlike the main processor), making the selling of

organic milk 'quite difficult' as few marketing funds are available to them (Johnsen and Mohr, 2000, p.7).

The two main dairy processors in Denmark (MD Foods and Klover) accepted responsibility for the single cooperative for organic milk that producers had previously operated between 1990-97. By 1999, over 22 per cent of all milk sold in Denmark was ecologically produced and such milk had 'become a symbol of the organic development' serving as 'an introduction' for many consumers (Norfelt, 2000, p.2). Over four per cent of all food sold in Denmark was organic in 1999, the highest of all Nordic countries.

In Finland, 15 regional producer-owned marketing organisations and the state-funded *Finfood-Luomu* organisation (established in 1998) undertake extensive marketing of ecological food, both domestically and for exports. In Sweden, similarly, regional farmer cooperatives have been formed with the aim of 'making the mainstream food market – the processing industry, wholesalers and food chains – take responsibility for organic products' (Kallander, 2000, p.4).

In supply and demand relationships the role of producers is vital. The Swedish conventional farmers' federation, Lantbrukarnas RiksForbund (LRF), has been an early and strong contributor to general education for environmentally improved food products. LRF introduced a comprehensive environmental audit scheme for farms in 1996 and included a full colour, 16-page supplement on 'creating the world's cleanest farming' in its newspaper that year. It also joined environmental NGOs and government agencies in an extensive advertising campaign for a ten per cent conversion of agricultural lands to organic by 2000.

4.9.4 Retailers

Retailers have the closest and most frequent relationship with consumers and in Sweden and Denmark they have used that role to build strong demand for organic food. Sweden's two leading retail chains have their own parallel labelling systems based on environmental criteria which allow most 'eco-branded' products to also carry the national *KRAV* label. The sister organisation to Norway's Cooperative retail chain, Sweden's Consumer Cooperative or *Kooperativa Forbundet* (KF), has the *Anglamark* label, and also operates a high profile chain called *Gron Konsum* (Green Consumer). It was KF's initiative to supply certified organic food in the 1980s that forced the larger ICA chain to also compete with its *Sundra* 'eco-brand'. A third chain, *Henkop,* is now highly competitive, selling organic milk at the same price as conventional, without reducing the premium to producers (Kallander, 2000,

p.7). According to Danish experience, retailers' initiatives to lower the price of organic milk encourage consumer change: 'milk is an easily substituted product if only ten percent premium exists' (Forbrugerraadet, pers.comm., 1997).

In 1993, the largest retailer in Denmark, the Cooperative chain, *Forbruger Dansk Brugsforeninger* (FDB), gave a clear signal to producers to supply more organic food by lowering its consumer price and stocking a wide range of eco-labelled products (Samuelsen, 1997, p.20). FDB's main chain, *Super Brugsen*, accounts for the highest sales of organic food, which, across the entire FDB chain, averages more than eight per cent of all food sold (Norfelt, 2000, p.9). *Super Brugsen* was reported to have also innovatively marketed organic and 'free range' eggs by labelling all conventional eggs as products from 'tortured hens', causing demand for such eggs to collapse. The stores then informed suppliers that conventional products were no longer required by their customers (Hille, pers.comm., 1998; *Debio,* 1998).

In early 2000, the KF chain in Sweden relaunched its *Anglamark* label in an aggressive campaign to reach higher sales targets for organic food. The author observed one television advertisement where a waiter in a restaurant convinces two diners that a spray of pesticides on their food prior to eating was normal as 'everyone else eats it and there is no scientific evidence that it is harmful'. The message was that *Anglamark* products are 'guaranteed non-sprayed'. Although the advertisement created some controversy, it reflected the confidence of the chain to communicate the product differences of organic food to mainstream consumers.

However, the Nordic retail chains have not gone as far as the Migros chain in Switzerland, which was observed by the author in 1998 to have expanded its well established ecological profile to include social issues. This chain responded to consumers' health concerns about tobacco and alcohol by voluntarily removing these products from its stores, despite obvious loss of revenue. Since the early 1990s Migros has been locked in strong competition with Switerland's Cooperative chain and the latter's successful promotion of organic food (Belz, 1996).

Because retailers can act as 'gatekeepers' by selecting or rejecting what products to stock, to advertise and to position on shelves, theirs is an absolutely critical role. They can also provide pre-visit and in-store opportunities for consumers to be informed and sample ecological food. The Norwegian Cooperative chain's training course for all its storeowners and employees is designed to equip them with the capacity to communicate an understanding

of why ecological food production is different and what its benefits are. Unfortunately, no other retailer in Norway has sought to improve the competency of its own personnel to undertake such a educative role.

In Finland, the *Luomo* eco-label for organic food is widely promoted across many retail chains, due in part to a popular annual award for the best promotion by an individual store. Based on such criteria as displays, range of products stocked and sales percentage, the winner receives extensive coverage in the media as well as inclusion in a video and booklet distributed to all stores (Kottila, pers. comm., 2001). Interestingly, it was *Debio's* temporary adoption of a slogan similar to *Luomu's* 'Taste the Future' and the Swedish Arla milk processor's 'Organic: the Future of Milk', that caused controversy in 2000 (Debio, 2001). A clue as to why some actors in Norway could object to marketing that is acceptable in other Nordic countries may exist in the perception of the processor who considered that, because organic milk is a 'new, knowledge-intensive product', there is a need to focus marketing first on physical attributes before 'building the emotional environmental values' (1998).

It is also interesting to note that consumers in other Nordic countries do not have the same exposure to country-of-origin labelling as in Norway, although Finland, Iceland and Sweden have lower profile, indirect campaigns. The success of *Godt Norske* at the expense of *Debio* could be due in part to the marketing theory that intensive advertising of any 'brand' helps determine the perception of quality by consumers (Niva *et al.,* 1997, p.5).

Even though there is some consumer confusion with dual labels in Swedish stores, most actors in Norway believe such competition between retailers has helped build overall awareness of ecological food, unlike their own situation. In 2000, just as the Norwegian Cooperative chain (NKL) entered a new marketing partnership with the organic-profiled Cooperative retailers in Sweden and Denmark to form *Coop Norden*, NKL decided to begin promoting Integrated Production (IP) products in addition to *Debio* products. The move suggests that the Norwegian retailer is concerned about its ability to manage the supply and demand of organic prodcuts. Significantly, the ICA chain in Sweden has already moved towards IP products due to problems obtaining organic products from its own supply chain. It has been suggested that competition from KF for the organic market has proven difficult for ICA, with its environmental managers experiencing significant 'green walls' within its own supply chain (Thidell, pers. comm., 1999).

4.9.5 Providing quality information

Both the quality and quantity of information provided to consumers needs to be monitored if it is to help build competency for informed choice among mainstream consumers. The actors have identified effective product information as having a number of key characteristics (see Table 4.8). Especially important is clear definition of the differences between competing 'eco-brands' or 'quality marks' (such as *Godt Norske*) and national eco-labels. 'Trust' is a key message of eco-labels but that is also communicated by the conventional and genetic engineering food sectors, so improving the capacity of consumers to make informed choice becomes vital (Kallander, 2000, p.18). This is also a reason why many actors in the *Debio* and other organic chains believe the labelling criteria and the verification process could be more transparent and better communicated to consumers.

All *Debio* actors believe that consumers are more likely to respond to environmental messages that are positive. Messages should empower, encourage and give confidence to change behaviour, especially habitual daily purchases, through easy and convenient steps for gaining more knowledge. The actors generally consider that information from marketing and labelling needs to be simple, clear, and concise and be made available in varied formats and channels to reach all segments. Because consumers have different learning abilities and time constraints, creative ideas to encourage change in habitual shopping and buying processes are essential. Examples include in-store shelf positioning, separate sections, signs and information tags, and use of Internet technology to assist pre-visit. Providing opportunities for both feedback and follow up for more information are also essential (ENGO, 1997). The special fortnight of organic food promotion by the NKL retail chain in Norway is commended, although some actors note that not all stores fully participate.

In contrast to Sweden and Denmark, the *Debio* actors tend to support greater communication of human health concerns rather than the environmentally sound production of food. Yet the marketing of the Swedish *Anglamark,* with its 'shock' focus on pesticide consumption by 'unwitting' consumers of conventional food, would be considered too controversial and 'negative' in Norway (Retailer, 2001; *Debio*, 2001).

Table 4-8: Needed improvements in consumer information

Actors	Debio	ENGO	Large Producer	Small Producer	Processor	Retailer	Consumer Advocate
Improved product information							
Labelling criteria explained	M	H	M	H	M	H	H
Marketing claims explained	H	H	M	H	L	H	H
Alternative product comparisons	H	H	L	H	L	M	H
Product declarations provided	M	M	L	M	L	M	H
Physical attributes explained	H	M	M	M	M	M	M
Price differences explained	H	H	H	H	H	H	H
Local/country-of-origin benefits	M	M	H	H	H	M	M

H=High, M=Moderate, L=Low (or not mentioned) weight of views of actors

4.10 Conclusion

The case of *Debio* labelled organic food in Norway has verified key factors at the macro level regarding demand for environmentally improved products. These issues centre on gaps and contradictions between the expected and actual demand, particularly:

- Institutional structures, especially those concerning processing/wholesaling of food products, are constraining the supply and the demand (marketing) of organic food;
- Norwegian consumers have a low perception of their responsibility to change food product preferences or consumption patterns, due mainly to high organic prices and continuing trust in government-endorsed conventional food;
- The 'free riding' tendency of consumers is not being countered by knowledge about pricing of food generally and associated 'hidden costs'. As most retailers, processors and producers perceive ecological food to be a small market niche with high premiums, supply is not keeping up with demand;
- There is not a consistent, learning-oriented approach to identifying and responding to consumer need for further information, especially about the impact of production processes and environmental or health consequences of consumption. There is also no

clear evidence that market research is monitoring the 'unarticulated needs' of consumers for such knowledge; and

- The different criteria for separate product labels are not fully explained and the much larger marketing budget for 'country-of-origin' labelling is overwhelming the promotion of organic food.

Compared to education and training on the supply side, little investment is occurring to build informed choice about food in the market place. Observation of the content of information products used in the *Debio* chain indicates no systematic delivery of broader information about sustainability, such as internalisation of environmental costs. The level of conceptual and instrumental knowledge being communicated along the product chain to consumers appears low compared to that in Denmark, Sweden and Finland. Even though there is criticism within these other Nordic countries that marketing is still inadequate for the challenge involved, the key actors, especially retailers, processors and the main producer organisations, actively support the national eco-labels. Overall, substantially larger marketing budgets are operating in these countries.

In Norway, the largest producer's association, the main processor and all but one retailer, have not set targets for developing the organic market. No competition between retailers exists and the Ministry of Agriculture has been much slower to invest in either the supply or demand sides of ecological food production. The fear of rapid growth in consumer demand for organic food (and the resulting production costs or increased imports) has instead encouraged extensive marketing of conventional food under a 'country-of-origin' label. The result is that Norway is experiencing more 'business as usual' in agricultural and food industries generally, compared to most other Nordic countries.

The weakest point in product information flow appears to be between the marketers within the processing, retailing and eco-labelling organisations. The actors blame each other for the lack of coordination while expecting the government to take more responsibility for improving the competency of mainstream consumers. This highlights the socio-cultural and political dynamics that constrain supply and demand for ecological food in Norway, more so than in other Nordic countries. In particular, a paradox exists between government desire to protect Norwegian food production and the near-monopoly processor on the one hand, and government policy for cheaper food and increasing competition between food retailers on the other. Despite Norway's relatively less intensive farming and the absence of any food confidence crisis (to date), organic food production remains 'marginalised' on both the supply and demand sides.

Two clear success factors that are evident in the three EU- member Nordic countries do not exist to the same extent in Norway and Iceland. These are:

- early and strong investment by government for producer conversion subsidies and target setting, and
- early initiative by the largest retail chain to close the price gap, to pressure their suppliers (the processors) and to force other chains to compete for the organic market.

In the next chapter, how these key success factors can help set more favourable general conditions for consumer competency building will be explored in detail.

CHAPTER 5:
OPPORTUNITIES TO IMPROVE THE TOOLS

5.1 Introduction

This chapter examines where and how to improve the overall effectiveness of informed consumer choice as a mechanism to achieve sustainability. It identifies how the tools of marketing and eco-labelling can more effectively build the capacity of consumers to make informed decisions. This is a complex challenge, and the chapter seeks to point the direction forward. In doing so it addresses both the internal and external factors required to achieve the goal of competent consumers.

The approach taken is to investigate the framework conditions needed to improve the performance of the tools so they can support informed choices by mainstream consumers; this occurs within the broader context of demand side policies and instruments, and seeks to ensure all critical barriers hindering sustainability can be addressed.

The chapter begins by noting the global findings that are confirmed by the micro case of demand in Norway and of ecological food in particular. Consumer demand for environmentally responsible products is not driving sustainable production as strongly as expected. Critical obstacles are being encountered on both the supply and demand sides and these are affected by each other. One pivotal factor is the low level of knowledge held by all actors in the product chain. The chapter clarifies the knowledge needed for competent decision-making by consumers and the key factors that should be addressed if a more effective policy framework for informed choice is to emerge.

It is argued that a key condition is improved knowledge-based abilities in consumers. Both consumer motivation (through greater confidence and articulation of needs) and opportunities to act (through improved access to information) will benefit from such investment. Consumer capabilities to select and process relevant information will be facilitated by ensuring that the information provided is 'value adding' to consumer knowledge levels. The chapter looks at where opportunities exist to improve such learning along the product chain and how actors can invest in such a process.

5.2 How the micro case supports the global findings

5.2.1 Overall weakness in demand

The findings of the *Debio* ecological/organic food case in Norway confirm the limited success of informed consumer choice. While substantial barriers to supply restrict opportunities for choice, there is also limited access to information for informed decision-making. Structural arrangements, government policies and industry fears are limiting both types of opportunities for consumers. The result is that consumer motivation and evaluative abilities also remain underdeveloped. According to the Nordic Council of Ministers, one of the overriding causes for low demand is a lack of knowledge disseminated and used by all actors (Nordic CoM, 1998, p.7).

Policy makers and researchers into sustainability issues have identified several important barriers, and these findings are reinforced by the *Debio* case. The two main factors are:

- Gaps, inconsistencies and contradictions exist in the attitudes and actions of consumers (particularly younger age groups) and of other actors along the product chain, and

- Compared to investment on the supply side, marketing and eco-labelling is receiving belated attention by most actors, with the result that these information tools are not performing as well as anticipated.

A driving factor for industry investment in environmentally improved products has been the expectation of future demand, created in part by increasing use of environmental information in consumer decision making. However, the *Debio* case confirms a Finnish study showing low consumer ability to consider the environmental implications of their decisions. According to Swedish retailers, consumers also had low demand for information due to a lack of basic knowledge and understanding of environmental problems (Heiskanen *et al.*, 1998, p.46-47). The Norwegian experience with ecological food also underlines the finding that: 'Ultimately, lasting changes in consumption behaviour are only likely if those concerned understand their impacts, know about the alternatives, are motivated to change and have the capacity to act' (MoE-Norway, 1998, p.5-6).

The *Debio* case suggests that the information tools to support consumer decision-making may not be as effective as anticipated. The buying process for the rational consumer,

according to most marketing theories, involves five steps from 'need recognition', 'information search', 'evaluating alternatives', 'purchase' and 'post-purchase evaluation' (Kotlar, 1994, p.194; Orre, 1996, p.20). The findings indicate that consumer understanding and ability to use knowledge about the environmental and health impact of ecological products is weak at each stage.

5.2.2 Under-performing information tools

We have seen that, for Norwegian ecological food, the main gaps in performance of demand side information tools stem from weaknesses in overcoming the following barriers:

- High price premiums (both real and perceived);
- Habitual purchasing;
- Low internalisation of responsibility;
- Poor understanding of internalisation of costs in prices;
- Poor capability to differentiate between competing labels;
- Low knowledge base of non-physical attributes of alternative products; and
- Confidence in conventional products as sufficiently 'clean, green and safe'.

These findings are in accord with those at the global level, indicating that current information tools are struggling to build demand. The underlying patterns of demand are affected not only by market strategy, but also by market structure, values, knowledge, equity, prices, regulation and infrastructure (MoE-Norway, 1998, p.5). External factors, such as structural conditions, help explain the gap between expressed consumer willingness to act and actual commitment (Nyberg, 1999, p.6). The key task thus becomes creating the conditions which improve the capacity of individual consumers, businesses and public authorities to choose, use and dispose of goods in a sustainable way; in effect, 'to move the sustainable alternatives from the margins to the mainstream' (MoE-Norway, 1998, p.5).

The factors that need to be addressed to overcome barriers and accelerate informed choice include:

- Changing perceptions and policies of actors and improving the flow of conceptual and instrumental knowledge to consumers;

- Changing policy measures that inhibit choice such as contradictory subsidies and signals. These regulatory and economic instruments can undermine information tools.

There is a need to move towards an optimal policy mix of instruments that complement and strengthen informed choice, including recognising that marketing and eco-labelling need adequate resourcing;

- Broadening the perception that demand for environmentally responsible products exists only as small niche markets. Such attitudes are influencing other actors, especially mainstream consumers, to regard preferences for these products as 'emotional' rather than 'rational' and to therefore encourage such demand to be ignored or marginalised; and

- Ensuring that actors supply adequate, relevant and practical information to meet the knowledge needs of consumers. The lack of common language and core knowledge for sustainability inhibits the promotion of learning outcomes in marketing and eco-labelling. An example is how the food chain is inconsistent in helping consumers understand the need to internalise environmental costs. Marketing, by contrast, is moving in the opposite direction by negatively reinforcing 'lowest common denominator' pricing and targeting environmental information only to premium niches. Because most actors do not perceive marketing and eco-labelling as learning tools for sustainability, they are not contributing fully to consumer education/competency building.

An OECD report concluded that 'overall, eco-labelling has only been moderately successful with the individual consumer' (1997c, p.6). The *Debio* case (and organic labelling generally in the Nordic countries) is indicative of the many challenges facing eco-labelling in most product groups. It is not simply a matter of improving the visibility of eco-labels in stores, although this would help remind consumers that products exist. It is mainly the profusion of official and 'self-declared' labels and 'an apparent lack of knowledge among many actors as to what different environmental labels represent' which weakens the reliability of eco-labels as a source of environmental information (Heiskanen *et al.,* 1998, p.50). Even in the strongest Nordic market for eco-labelled food, Denmark, consumers' high familiarity with the 'state organic mark' is not matched by an understanding of its fundamental principles: 'this limited understanding of the standards behind production can represent a threat to confidence in the organic mark' (MoFAF-Denmark, 1999, p.37).

Currently, little environmental information is exchanged along most product chains, reinforcing poor communication about the purpose of eco-labelling. The problem has been

attributed to a lack of competence among actors, few of whom are said to have 'well structured and systematic procedures for demanding and evaluating environmental information' (Heiskanen *et al.*, 1998, p.48).

Rensvik argues that empowering consumers is essential if they are not to remain the 'weakest' actor in the chain. He goes further: he maintains that the ability of consumers to communicate their needs is more important than providing access to information and opportunities to act (1996, p.25). This issue is related to differences in the perceived roles, responsibilities and rights of key actors to improving their knowledge levels. A conflict in demand for information exists, which could be attributed in part to fear by consumers, business and government in acquiring information, showing understanding and taking responsibility for changing their behaviour. For consumers, this certainly involves internalising responsibilities for changing unsustainable aspects of their lifestyles. Knowledge is a critical and complex area to address.

5.3 The knowledge needs of mainstream consumers

5.3.1 Barriers needing to be addressed

The thesis has confirmed that a significant gap exists between expected and actual consumer behaviour. The case of organic food demand in Norway parallels the findings of Thogersen and Andersen in Denmark, that 'the opportunity and ability to perform environmentally friendly behaviour are important conditions for people to act in accordance with their intentions; conditions which are often not fulfilled in practice' (1996, p.191). Furthermore, not only is demand dependent upon supply but also on consumers' ability to differentiate between organic and non-organic products. To ensure that consumers are 'fully enabled to behave rationally and exert basic market pull...we need to improve quality, presentation and accessibility of the information available' (Rensvik, 1996, p.26).

Before consumer motivation can be translated into changed market behaviour, certain issues need to be addressed. As we have seen, these include, particularly:

- Improved access to information about the environmental impact of products;
- Substantiation of claims to provide credibility of such information;
- Acceptable trade-offs for behaving in an environmentally responsible way; and

- Trust that responsibilities, costs and benefits are being shared across society (Heiskanen *et al.*, 1995, p.35-36)

These factors have consequences for the type and content of knowledge that is provided to strengthen consumer abilities. Unfortunately, despite the importance of informed choice in delivering demand side changes, it has been shown that there is little monitoring of consumer knowledge of environmental issues or related attributes of products. Both marketing and eco-labelling efforts are weak in this regard. Paradoxically, actors generally do not perceive the current competencies of consumers as sufficiently high. This is why they focus efforts on the more 'sophisticated' consumer, segmenting environmentally responsible products, such as organic food, to niche markets. This belief is based less on market research than a combination of theories, general assumptions and personal experiences. Thus, there is no core knowledge to assist marketing and labelling strategies and other information/education programs. An attempt will be made to clarify what 'content' a competent consumer should have, based on what is known of his/her information and knowledge needs.

5.3.2 What are the knowledge needs of consumers?

If we take a holistic view of knowledge requirements for sustainability they would include the ability to understand the 'triple bottom line' of all information being used to measure its progress, that is, the economic, ecological and social dimensions. Such a knowledge base is essential if rational decision-making is to lead to a broad-scale shift by consumers. The knowledge implied by organic food product labelling provides an example of such a base. The attributes of an ecological (organic) food product represent the essential information that distinguishes it from the conventional, industrial or biotechnological alternatives.

Conceptual knowledge of the food cycle underpins any core 'literacy' for consumer competency regarding food choices, as it should for all decision makers along the product chain. This scientific knowledge base would support communication about the qualities of environmentally improved products, production processes and benefits to the environment and human health. An example is the environmental load of 'lower' products in the food chain, such as vegetables and eggs, compared to beef. Other knowledge categories for the informed consumer link water, energy (including transportation, refrigeration and cooking), artificial fertilisers, pesticides, hormones, anti-biotics and GMOs. Value based knowledge would help explain the principles of sustainability and emerging concepts such as 'eco-sufficient' levels of consumption.

Instrumental information, relating to skills for efficient searching, selecting and application of information in decision-making, would cover diet selection, food preparation and waste disposal. A core of 'concrete' knowledge would therefore assist the consumer in several ways, including knowing how to:

- translate the impacts and consequences of the food cycle into simple and useable knowledge to guide the selection of organic products, using information provided through marketing claims, packaging and in-store information;

- recognise, differentiate, understand and use eco-labels, including the life cycle assessment criteria of eco-labels, third party verified labels, product declaration profiles and also producers' and retailers' own symbols; and

- differentiate between alternative information when harmfulness or benefit, scientific quality and explanations for pricing differences seem to be comparable.

Taking a wide spectrum of theoretical and empirical evidence into consideration allows further requirements for competent consumers to emerge. All involve a need to 'demystify' key concepts and improve abilities with:

a) science-based conceptual knowledge;
b) acknowledgment of the role of values and ethics in decision-making;
c) price internalisation and cost-benefit analysis; and
d) skills to evaluate information sources and implicit consumption signals.

Each of these will now be examined.

5.3.3 Science-based conceptual knowledge

The science of ecological systems and their interrelationships underpins much of the economic and management strategy on the supply side of sustainability. It is also essential on the demand side. In terms of food, the spread of scientific knowledge helps explain trends towards reduced meat consumption and purchasing patterns based on knowing when locally produced food is more eco-efficient (Nordic CoM, 1998, p.6). Consumers are, nevertheless, often ignorant of scientific information and its application to basic sustainability concepts,

including life cycle assessment of products. To improve consumer understanding of the environmental impact and consequences of their decisions, conceptual knowledge needs to be progressively built as product information flows along the chain. This would assist consumer analysis of eco-labelling and marketing claims.

Such 'functional environmental literacy' would assist communication between actors and other stakeholders. It would also contribute to bridging the gaps between social and natural sciences, economics and other forms of knowledge. Interdisciplinary knowledge is an essential part of competency as both the causes and solutions to environmental problems involve all forms of knowledge. Traditional and local knowledge of basic food is also valid and needs to be acknowledged. It is also the case that 'information is not a collection of self-evident facts, but an understanding developed by an interpretation of available knowledge. This understanding is largely affected by the perception of the various actors' (Rusten and Woien, 1993, p.8). Cultural values are therefore as important an influence on consumers as science. It is essential that competence be seen as broad and practical, focussing on building the ability of individuals to link information from diverse sources.

The current level of integration of environmental information, especially concerning life cycle aspects of innovative products and services, affects the processes of information dissemination along the entire product chain. Poor understanding of the criteria of eco-labels and marketing claims is caused in part by the low levels of integrated knowledge held by marketers themselves. One obvious field for intergating knolwedge would be human and ecological health. Consumers appear to be interested in learning more about food, health and environmental relationships but are confused by unverifiable marketing claims.

The issue of biotechnology in food production is a clear example of the interface between knowledge from different disciplines and dimensions - science, economics, culture and ethics. Attempts to market food products containing GMOs show that the presumption of many science/technology approaches - that improved public 'understanding of science will lead to informed participation in decisions about contentious issues' - is flawed as 'decisions are influenced most deeply by value judgements and personal experience'. In addition, 'scientists are no different than non-specialists in bringing their personal beliefs even when it comes to complex technical matters' (Levinson, 1999).

As a result, scientific disagreements exist which can create confusion for the public and make it hard to evaluate issues of uncertainty and risk. Values also are also raised as the experimentation in gene technology to modify species, especially animals, is seen as

'ethically suspicious' by many people (Bugge, 1995, p.16). The complexity of the decisions involved needs to be fully acknowledged rather than simply to apply regulatory or legal tools (that either ban or allow such products) without education. Unless equipped with adequate knowledge, individuals have no choice but to defer responsibility to governmental or inter-governmental bodies such as the WTO. This adds another dilemma to effective consumer informed choice; that of locus of control.

5.3.4 Capacity to consider values and ethics in decision-making

As our previous example of genetic engineering shows, consumers need to be aware of how value positions underlie all information. Individuals need to understand how values are used in communication and to think critically about cultural influences. For example, farmers reluctance to convert to organic production are influenced by beliefs that their cultural relationship with the environment is under threat (Katila, 1996, p.110). The social principles of sustainable development and Agenda 21 (including the precautionary and inter and intra generational equity principles) are essentially value positions that are closely connected to the internalisation of responsibility and questions of what is 'enough' (eco-sufficiency).

In 1976, a Danish analysis of the social values behind US attitudes to material growth concluded that: 'many of these values, which were originally developed as means to secure the basic needs for survival, have now been over-emphasised to the degree that they pose a threat to basic needs' (Christensen and Norgard, 1976. p.422). The study suggested that placing less emphasis on materialism and individualism may result in a 'more consistent and less frustrating social environment' (p.421). The authors point to the extent to which anxiety, stress and lack of physical needs, such as exercise and sleep, are impacting on children's lives especially, and the over consumption of food, medicines and illicit drugs impair quality of life. The dilemma is whether people should exercise a personal 'right' to be responsible, or whether they should expect a 'nanny state' to protect them. One critical area is whether or not decisions about food production should involve questions of ethical assessment. According to the Swedish Ministry of Agriculture, natural resource management should consider a wide range of ethical issues – in such areas as animal welfare, biodiversity and fair and equitable access to food by people in extreme poverty (MoAFF-Sweden, 2000, p.5).

Holistic rather than comparmentalised knowledge is required in order to understand sustainability challenenges. Neither assigning only monetary values nor determining the environmental status of products as simply postitive or negative, is sufficient. In the case of food, some researchers argue that it is possible to introduce several moral criteria, such as

whether child labour is utilised, or there has been inhumane treatment of animals, into consumer decision-making. (Strandbakken and Kasin, 1995, p.38).

5.3.5 Ability to analyse costs-benefits of price internalisation

One barrier to increasing consumption of ecological food is consumer perception that the personal economic costs of choosing environmentally responsible products are too high. While both perceived and actual price premiums are a major constraint to improving the environmental quality of products (Heiskanen *et al.,* 1998, p.36), the Norwegian case indicates that the internalisation of responsibility to act is undermined by the belief that food prices are generally too high. By understanding the *real* cost of food, both as a percentage of income and in terms of 'hidden' environmental and health repairs, consumers can make the cost-benefit trade-offs required. In terms of rational decision-making, this would seem to be essential for informed choice. The internalisation of environmental costs in prices is essential because 'paying for environmental resources will make business and consumers use them more carefully' (WBCSD, 1996a, p.11). With economic calculations dominating modern lives, it is vital that informed decisions about the real economic value of a product are made. If consumers can make their own elementary cost-benefit assessment, some of the bias against innovative products may be reduced as understanding increases, especially of a product's quality and performance (including trade offs), environmental attributes and price differences.

Ecological food is an example of where consumers do not understand the economics of more labour-intensive inputs and lower yields. They resist paying the real prices, even though a reduction in the quantity consumed would compensate for paying a premium for higher quality and the associated 'bonuses' of human and environmental benefits. Agricultural land is being 'ecologically stressed' worldwide, yet if consumers understood the basic pricing of food, much of this 'false economics' would probably not be allowed to happen. In 2001, Tasmanian potato farmers followed the prices along the food chain to discover that fast food restaurants finally sold the potatoes at a massive increase of factor 45 above the price that growers received (*The Australian*, 1 August 2001). The producers expressed a concern that is being increasingly communicated globally: that consumers remain ignorant of the input costs of growing quality food and that the 'cost-price squeeze' is not being applied to other actors in the food chain. The majority of respondents to a consumer poll indicated they would not pay more for potatoes to support the farmers (*Advocate*, 1 August 2001).

One of the most important components of knowledge that needs to be conveyed by information tools, is the decline of the cost of food relative to income. As noted earlier, in industrialised countries' average household expenditure on food is less than half what it was a generation ago and, in some cases, has declined to only 10-12 per cent of total income (Rensvik, 1996, p.20). When people realise that by removing income spent on convenience foods and beverages, 'take-away' and restaurant meals, expenditure on basic food declines further, revealing the perceived cost of food as extremely inaccurate.

The support of other actors, especially government and business, will be needed for the internalisation of costs, the removal of perverse subsidies and the provision of new incentives to reward the transition to sustainable consumption. The irony is that such support depends, in turn, on their own levels of competence.

5.3.6 Skills to evaluate information, signals and sources

The skill development earlier described would help consumers seek and apply knowledge from both traditional and diverse sources, including directly from local producers. Consumers would be empowered to either demand more information or abstain from purchasing conventional products, pressuring retailers to reverse the current trend away from providing environmental information.

In particular, instrumental knowledge needs to help in the recognition of different labels in order to differentiate between 'similar' products. The two types of skills required to support effective 'know-how' are *explicit* (to be able to assess problems and use necessary tools) and *tacit* (to solve problems effectively in a way appropriate to their settings). While the former can be taught, the latter must be learned through practical experience and when these skills are combined they provide the 'knowledge capital' required for economic growth (WBCSD, 2000b, p.17). This combination is also required for consumers in terms of key concepts and skills for searching, accessing and evaluating information, and in order to discern false or shallow marketing signals. It would enhance the capacity to analyse food quality and provide another source of empowerment for mainstream consumers.

5.4 The key relationships to improve learning outcomes

5.4.1 Consistency between supply and demand side learning

Increasing both the producer and consumer response rates to sustainability will require consistent learning along the entire product chain by all actors. Developing the potential of marketing and eco-labelling as learning tools would greatly improve consumer competency and environmental literacy while at the same time helping to overcome issues of trust, credibility and information usefulness.

So what new angle on the information tools would help consumer education? Senge argues that it is crucial for learning to be based more around systems thinking and understanding interrelationships in the complex modern world. This helps simplify life by encouraging the learner to see the 'deeper patterns lying behind the events and details' (1995, p.73). As sustainability is basically a learning process for all actors, then two essential learning outcomes would be:

- a deeper understanding of the relationships between consumption patterns, economic development and environmental degradation; and
- a broad consensus and an 'acceptance of responsibility by...government, industry and the individual citizen' in order to 'manage consumption' (Long, 1994, p.159).

Examples of more specific learning outcomes would be the basic knowledge of ecological systems and of internalisation of costs in prices, neither of which is prominent in existing marketing or eco-labelling strategies.

Two developments are needed to facilitate better learning by consumers (and, indeed, all actors). They are (a) changes in the roles, responsibilities and rights of actors, and (b) the generation of a common language.

5.4.2 Changes to roles, responsibilities and rights of actors.

It is important that all actors are viewed, and view each other, as 'learners for sustainability' and that no one perceives themselves as having a 'monopoly' on knowledge. Respect and interest in different perspectives, traditions and cultural forms of knowledge is as necssary as benign technology and advanced science.

As identified in previous chapters, the internalisation of responsibility for behaviour is as important as internalisation of costs is to prices. One widespread attribution of responsibility for behavioural changes is the 'free-rider' tendency, where a consumer waits for social sanctions or regulation before changing behaviour (Grunert-Beckmann and Knudsen, 1996,

p.2). It is important to encourage consumers to make a genuine personal commitment rather than to simply pass responsibility onto government and business. However, such an outcome must be attained within a context of burgeoning individual freedom. Rights are often used by individuals to justify externalising responsibilities, and this is especially so when it comes to reducing excessive consumption.

The scale on which environmental issues occur raises doubts as to how much difference an individual's responsible behaviour can make. In terms of the law, rights are placed in the context of specifically defined norms of behaviour: 'A rule establishing strict liability implies that the responsible person must internalise the costs of the negative consequences of (his/her) behaviour' (MoE-Norway, 1995b, p.17). Responsibility is also as much a moral issue as it is a legal one, and both business and government attempt to address values through policy codes on standards of governance, but with mixed results: 'There is perhaps the danger that ethics is becoming the management gimmick of our time' (Hopfenbeck, 1993, p.304).

However, consumers can improve their awareness of the scope of their responsibilities if they understand the consequences of decisions. The question then becomes, how should such competency be provided? One approach would be to expand the 'right' to more information to ensure that it is about gaining knowledge and an opportunity to develop abilities. This is an issue linked to the role and rights of individuals as citizens.

The Norwegian Constitution adopted an article on the right to environmental information in 1992: 'every person has a right to an environment that is conducive to health and to surroundings whose productivity and diversity are preserved... In order to safeguard their right...citizens are entitled to be informed of the state of the natural environment and the effects of any encroachments on nature that are planned or commenced' (MoE- Norway, 1995b, p.8). It is generally agreed that this article covers only the right to participate in decision-making processes which affect individuals directly and personally, and not those to do with diffuse issues such as pesticides, antibiotics and hormones in the food chain. With consumer concerns increasingly focussed on global rather than local issues, the need to relate rights to the broader issues of sustainability emerges.

The overarching challenge of sustainability is to have its principles, such as intra and inter-generational equity, enter daily consciousness. Accepting shared responsibly for the welfare of people in extreme poverty and for ecosystem health relates to equitable consumption, implicit in such new concepts as 'environmental-space' and 'eco-sufficiency'. Implementing

solutions depends on open and transparent communication. It is because consumers need to trust governments, business and NGOs that a 'code of environmental honour' or a Declaration of Human Responsibility to match that of Human Rights has been suggested (Finnbogadottir, 1994, p.139).

The issue of which sources of information consumers can trust is critical. Confidentiality and fears of disclosure of commercial or other sensitive information cloud the reluctance of many producers and other actors to make more information available. Bureaucracy can stifle creative solutions to this challenge. However, regulatory measures could be effectively developed to extend or introduce, 'right-to-know' provisions to cover the life cycle impacts of products (MoE-Norway, 1995a, p.28). Some processors and retailers involved in the food chain realise 'consumers demand to know and understand who and what they can trust' (MoAFF-Sweden, 2001, p.9). Confidence in the information provided by eco-labelling is of great importance to consumers because information provided by producers or processors is often regarded as 'reminiscent of advertising'. A neutral body, endorsed by government authorities, such as a national eco-labelling scheme, is preferable to a manufacturer's label (Bugge, 1995, p.19). 'Sceptical and overloaded' consumers could dismiss all information as marketing 'gloss'.

In the Nordic countries, the strong cultural influence of the 'friluft' (open-air) traditions have strongly influenced Nordic values towards nature (Witoszek, 1993). Yet this regular interaction with nature may have bolstered the high level of trust in conventional food production methods, as demonstrated by the success of country-of-origin labelling undermining eco-labelling in Norway. Conversely, it remains uncertain how the growing separation from direct natural environment experiences will affect the behaviour of urbanised consumers, especially in younger age groups.

According to Soler, personal experience of ecological issues ('ecological clues') has more influence on environmentally conscious behaviour than variables such as age, gender and location (1994) When individuals gain specific knowledge about the consequences of specific behaviour, environmental problems become real. If individuals are isolated from personal experiences of the natural environment, then it follows that their perception of the costs-benefits of making environmentally responsible choices also varies.

5.4.3 The need for a common language

To assist the integration of knowledge, a common language to facilitate communication and learning is essential. This is not a question of 'universal English', but one of a need for consistency in conceptual and instrumental terminology. A shared understanding of concepts and key words is requisite if people are to communicate openly and objectively. It enables active transmission of information and ideas, articulation of concerns and needs, and gives confidence to address underlying value and ethical issues.

The need for a common language is also evident inside organisations. The problem of a 'green wall' within an organisation, at any stage of the product information chain, is real. With growing organisational complexity (in business and in public bodies), specialisation has increased and this differentiation has affected management functions and responsibilities. While sustainability policies drive innovative products and services, the different specialist 'languages' make the identification, sharing and resolution of problems very difficult. A cartoon depicting a boardroom of specialists all delivering their interpretation of a solution through 'bubbles' of different jargon and symbols is very close to reality. The result is most often an ineffective process as information is lost, discarded, ignored or misinterpreted – and that is before the complicating involvement of external partners and other actors in the product chain.

Conflicting perceptions held by various professionals in marketing, product design and production can seriously inhibit environmental management systems. The flow of information on environmental issues has been identified as the main problem experienced by marketers (Halme, 1994, p.15-17). According to a senior Swiss banker, Franz Knecht (pers. comm., 1997), achieving a commonly accepted language requires improving abilities to ask questions, develop answers and to listen. The challenge is to develop 'knowledgeable customers' and to bridge the language gap between environmental managers, marketers and financial analysts. The isolation of such agencies as agriculture, environment, health, education and consumer affairs, is in part caused by a lack of common language and inconsistencies in identifying the causes of shared problems and solutions. This affects the dissemination of information and problem-solving communication essential to any demand side improvement.

5.5 The role of information tools in strengthening the learning process

5.5.1 Requirements for effective information flow

Three conditions are needed in order for the information flow along the product chain to contribute to improved consumer knowledge of sustainability. These are:

- Consumers owning their learning processes for continuous improvement. This would strengthen individual motivation by further implementing 'right-to-know' policies, building the locus of control and helping the internalisation of responsibility;

- Consistency in eco-labelling and marketing tools based on responsiveness and helping consumers articulate their needs. This would develop the abilities of mainstream consumers to make cost-benefit comparisons and integrate longer-term factors into decision-making, and;

- Consistency in signals, messages and language from all actors, especially the marketing sections of corporations, industry branches and government agencies. This would minimise communication obstacles that constrain collective resolution of sustainability challenges.

The success factors identified from the broader Nordic experiences with ecological food suggest that there is considerable potential for information tools to build consumer competency. However, this potential is currently constrained by lack of value-adding information along the product chain.

Applying a product chain approach to the development of conceptual and instrumental knowledge would assist the flow from producer to consumer as well as the reverse, the feedback flow. A common knowledge base along the product chain would provide the core competency for informed choice, including procurement decisions. Thus, a 'seamless' learning process for all stakeholders would reduce the risk of one group of actors being informed and capable while others are not. Systematic learning among all actors in a product chain would also strengthen internal and external stakeholder communication.

5.5.2 Developing a 'seamless' learning strategy

For the product information flow along a chain to be more efficient, transparent and interactive for the end user, marketing, eco-labelling and other information tools need to have the following characteristics:

- Messages and content

It is important to provide knowledge about the positive consequences of environmentally improved products and to make it product-specific and available on the product itself (Orre, 1996, p.25). While using negative information, such as fear or guilt, is relevant in communicating risks to environmental and human health, 'fear-provoking messages' can become misused to let 'the end justify the means' (Olander and Thogersen, 1995, p.375). Avoiding excessive emphasis on negative aspects helps consumers to confidently exercise more 'locus of control' and contribute to solutions. By highlighting *what* factors make it difficult for individuals to change behaviour and *how* these barriers can be overcome, consumers can be equipped with more control over their own behaviour. This negates the criticism that information tools often intend to manipulate behavioural change rather than encourage learning processes. Olander goes further, arguing that information should be 'less cocksure, more "problematizing" and controversial' and that it needs to show how recipients can give direct feedback to the senders (nd, p.7).

Positive messages can be used to overcome price barriers by first focussing on the benefits of environmentally improved products, then giving 'options' for covering the costs of any premium. These options would expose the hidden costs of alternative products and the trade-offs involved. Messages generally need to be specific, clear and free of jargon if they are to be received as relevant by mainstream consumers. Heidenmark suggests that an example of 'easy-to-use' message is the "No synthetic pesticides" used by both the Swedish KRAV eco-label for organic food and by the Coop retail chain's *Anglamark* label (2000, p.140). It is important she argues, to 'think in terms of what can be understood by the end consumer' (2000, p.141).

Information should promote 'easy' actions, such as those suggested by the Nordic Council of Ministers - replace meat protein with legumes; choose ecological milk and make timesaving yet varied meals – with linkages to dietary benefits and positive environmental messages (Nordic CoM, 1998, p.42). It is important to use both health and environmental messages (Heidenmark, 2000, p.67). Consumers do need more environmental information. 75 per cent of surveyed Norwegian consumers want better information about additives, whilst 51 per cent want more information about production processes (Wandel, 1997, p.21).

Making reference in marketing to supply side concepts, such as eco-efficiently and LCA, would increase awareness and transparency of the criteria behind eco-labelling and

marketing claims. It could also add relevance to information conveyed in policy debates and in Corporate Environmental Reports. Criticism that the criteria of eco-labelling are not widely understood could be partially overcome by the placement of concise background information on the product itself, as occurs with nutritional panels on processed food. Such 'product declaration' profiles could appear below these existing panels or be presented in a simpler format using symbol ratings, as already used for energy efficiency information. Options to present more complex information (keeping in mind that consumers have minimum time to read such product information) include in-store leaflets, shelf stickers, special displays and computer screens. Post-purchase telephone or Internet sources may be even more helpful as consumers seek reinforcement of their decisions.

One model set of guidelines for quality information is that used by the Swedish Electrolux company for all environmental product communication. All information is based on science, is differentiable, is transparent and is function related (Orre, 1996, p.18). The company also seeks to harmonise internal 'environmental language' with that used externally in marketing and eco-labelling (pp.17-18).

Conceptual knowledge that should be communicated would pertain to:

- Internalisation of environmental costs in prices, including natural resources, human health related 'hidden' costs, trade and transportation;
- Principles of sustainability, such as values concerning equity and solidarity, and the precautionary principle;
- Balancing risks with trade-offs; and
- Applying values in decision-making as citizen and consumer.

Instrumental knowledge and related skills that merit communication would include:

- How to evaluate and accept or reject marketing claims;
- How to recognise and use eco-labelling, including understanding the basic criteria in order to differentiate between these and other 'eco-brands', symbols and labels (such as 'country-of-origin');
- Understanding information presented on product profile/declaration panels, such as LCA-based information about the product's environmental impact and comparative life cycle advantages;
- Practical 'cost-benefit' guidelines for determining product quality and performance, especially when alternatives appear similar or are marketed as 'equivalents' and have a cheaper price;

- How to understand and manage the percentage of income spent on basic needs, such as food, in the context of a 'household green budget'; and
- Focussing perceptions of value away from products onto services. With food, it is satisfying meals that create the 'end service' for consumers (Pantzar, 1995). It could also be possible to see food in terms of 'services' for human health, in the same way that water, soil and biodiversity provide 'ecological services'. Such health related knowledge, especially focussing on the risks of over-consumption, could help change the perception of economic costs and reduce the trend to an obesity epidemic among young consumers.

- Targets

While it is important to reinforce existing 'green' consumer segments, information tools need to also meet the needs of mainstream consumer segments. Some social groups through which broad awareness about sustainable consumption can be effectively developed include:
- women (who influence many household decisions);
- older people (who are often 'the carriers of traditional values of frugality');
- youth (because they will the next generation of consumers, especially in higher proportions in developing countries); and
- affluent middle classes (because their consumption patterns 'shape the aspirations of others') (MoE-Norway, 1998, p.31).

- Channels of information delivery.

According to Prothero et al., many traditional communication methods are not suitable: 'Advertising for example, is difficult to formulate around green issues which are complex and hard to put across within the sort of short, style-oriented information bite that characterises many contemporary campaigns' ('997, p.74). This situation makes it essential that information dissemination channels exist to allow consumers to easily access information, to undertake informal learning and to trust the information received. In most industrialised countries, consumer organisations have high credibility and retailers are generally accepted as information providers, especially if personal communication occurs at the place of purchase. Facilitation of knowledge through more varied personal experiences, including special samplings, can help overcome habitual decision making when it comes to items of daily purchases, such as milk.

The 'intermediary consumers' (institutional buyers, public authorities and retailers) can stimulate market demand through their procurement decisions and by also communicating their reasoning to the end consumer. Such communication helps reinforce personal experiences and encourages the adoption of similar preferences by consumers.

- Market research

Orientating market research more towards consumers' 'unarticulated' needs will help identify the factors that influence the use of sustainability-related knowledge. The current conflicting and contradictory expressions of information needs must be tackled by market research if the information tools are to become more effective. Nordic studies into consumer behaviour have shown that 'the current demand for environmental improvements was rarely strong or clearly articulated' (Heiskanen *et al.,* 1998, p.12). Analysis of feedback on consumer knowledge levels, attitudes, perceptions of risk and costs-benefits will allow such tools to contribute more effectively to consumer learning.

It is essential that marketing provide a feedback system to encourage consumer learning and responsibility for change. If consumers are left at the 'end-of-the-pipe' without positive feedback loops, then cynicism and mistrust of information will not diminish. Government as well as business needs to rethink many conventional marketing practices. According to Olander, 'the primary aim of public information should be to increase the flow of information *among* the citizens, and *from* the citizens *to* society's decision-makers' (nd, p.7).

Measuring mainstream consumer knowledge levels allows the critical conceptual knowledge of LCA to be more effectively communicated and integrated into instrumental knowledge for decision making. Translating sustainability concepts into easy-to-use and relevant knowledge is essential if the full impact of the daily consumption of food (for example) is to be ever understood. Making marketing more knowledge-focussed would reduce current hindrances to consumer demand.

Pricing strategies also need to change. Peattie argues that the perceived value of environmental products by both producers and consumers leads to 'consumer exploitation' as some 'healthier' products (such as unsliced wholemeal bread) carry a premium even though processing costs are cheaper (1995, p.287). Peattie's views also help explain the situation experienced by *Debio* milk in Norway. When a producer offers a consumer the choice between a conventional 'grey' and a 'green' product, attempts are made to equalise all attributes, including price, to prevent a market where 'few consumers are likely to

discriminate in favour of the grey product' and so force the producer to replace the grey product (1995, p.287). However, by offering the green product as simply a 'complementary' brand, the loss of customers is reduced and some will accept the premium, thereby increasing profit.

5.6 Conditions that support a better framework

5.6.1 Infrastructure and instruments

If market demand for environmentally responsible products is to be developed, then strategies addressing the broader context of what drives consumption are required. Studies have shown that 'education efforts alone have little impact on sustainable behaviour' (McKenzie-Mohr, 1996, p.3). Experience with information campaigns has shown that behaviour cannot change in isolation 'as individuals and organisations often require support to implement behaviour change' (MoE-Norway, 1998, p.30). For example, product design and marketing standards can facilitate 'sustainable product choices...through normal everyday activities' (Ehrenfeld, 1995, p.52) but the most important types of change concern the institutional framework, creating 'new action coordinating structures, communicative linkages and information' (1995, p.57).

According to the UNEP, 'influencing choices means stimulating and facilitating new economic opportunities (better products and services) and altering the current infrastructure and regulatory framework that locks consumers into unsustainable behaviour' (1999, p.1). A number of policy instruments affect the success of information tools in building consumer demand. For example, both supply and price would improve by removing both the tax burden on labour and the 'perverse' subsidies that generate unsustainable patterns of consumption and production.

Structural changes are needed to develop more balanced, demand-driven policies that take as their premise the new reality clearly shown in this thesis - that consumers are not making informed choices for environmentally responsible products to the extent anticipated. Closing the gaps will require changes to institutions and organisational relationships (both internally and externally) along the entire product chain. Attention needs to be given to learning processes and the educational infrastructure. Facilitating a learning culture would improve the structural flow of information, including 'systems for collecting environmental information about products along the life cycle and passing this information onto customers'

(Heiskanen *et al.*, 1998, p.52). Not only is it important to improve the quantity and quality of information, but also the competency of users to 'understand, evaluate and to make decisions on the basis of the information provided' (p.52).

But what conditions would optimise consumer competency to make informed choices? The following could be considered prerequisites for informed choice and the optimisation of competent consumer decision-making. They pivot upon the need to review and clarify the rights, responsibilities and roles of actors influencing consumer behaviour.

5.6.2 The role of government in creating optimal conditions

Of all the actors, government is arguably the most critical as it has greater responsibility for the overall mix of tools. Despite some denial, many leaders in the business community recognise this reality: 'Government must play a role in elevating environmental awareness in order to create a pull from the marketplace for environmentally improved products, for instance through environmental education campaigns' (Falkham, 1996a, p.28). No other actor appears capable of setting the conditions needed at the local, national and international levels: 'Governments have to provide the overarching framework of incentives, infrastructure, regulation and leadership that will enable other actors to take up their responsibility for their part of the chain from production to consumption and final disposal' (MoE-Norway, 1995a, p.14).

Other business leaders consider that the long term investments required for sustainability are going to be 'pushed more by society at large than business' and that results will only occur of government policies are 'put in place to harness market forces' (Schmidheiney and Zorraquin, 1996, p.168). Governments have lead responsibilities for such consumer-influencing factors as education, economic instruments and consumer rights. They also have 'the central role in correcting market failures through the introduction of regulations, social and economic instruments', although they need to ensure that 'subsidies do not support unsustainable patterns of consumption and production' (MoE-Norway, 1995a, p.25-26). Sweden's success with 'green taxes' has been largely due to their revenue neutrality and direct conversion into environmental subsidies (SAEF, 1996, p.11). Due to the BSE crisis, the EU's subsidies for intensive farming are being replaced with support to increase organic production to meet consumer demand. With such an overall reduction in subsidies underway, the opportunity exists for consumers to become more informed about pricing and whether they should pay farmers for producing quality food rather than increasingly cheaper food.

The role of government has been a key factor in the success of organic products in Denmark: 'authorisation and control have increased the credibility of organic products, labels increased visibility and subsidies reduced premium prices consumers have to pay' (Thogersen and Andersen, 1996, p.186). Government has also ensured that the regulatory basis of the term 'organic' must be 'clearly distinguishable from other concepts' (MoFAF-Denmark, 1999, p.38). As a result Denmark has not seen attempts to widen the definition of 'organic' to allow for the inclusion of GMOs, as has repeatedly occurred in the USA (Lilliston and Cummins, 1998). All Nordic actors interviewed considered that any such manipulation of fundamental concepts would undermine the credibility of any government commitment to 'informed consumer choice'.

As consumers themselves, governments can adopt procurement policies that can significantly help create the 'critical mass' for environmentally improved products. In industrialised countries, governments consume up to 15 per cent of GNP and have significant potential to stimulate market demand (UNEP, 1999, p.1). The European Union's Fifth Environmental Policy and Action Plan, for example, advocates economic and fiscal incentives (such as energy taxes) to internalise environmental costs in order to help the competitiveness of environmentally-friendly goods and services (EEA, 1997). Sweden's taxes on the overuse of artificial fertilisers and pesticides, have proven to be an effective instrument (Nordic CoM, 1998, p.46).

According to the Nordic Council of Ministers, for eco-efficiency in the food supply chain to improve by a factor of four will require government to:

- set clear rules, a definite strategy and measuring indicators;
- support research and development, including within behavioural science;
- seek greater reciprocity in trade and environmental policy; and
- ensure that agencies and municipalities 'make it easier for consumers to choose' by supplying eco-labelling, consumer information and education (Nordic CoM, 1998, p.47).

One much needed initiative is the setting and maintaining of standards for environmental marketing claims. The office of Consumer Ombudsman exists in all Nordic countries and was established in Norway in 1972. Its purpose is to monitor and act upon marketing practices, in accordance with guidelines based on the following principles:

- claims on environmental friendliness need to be supported by an explanation of which qualities are improved or better than those in competing products;

- claims must be based on scientific and independent evidence;
- only products which are superior to their competitors may be marked; and
- the use of specific symbols or labels made by the producer should not cause confusion with other official environmental symbols such as eco-labelling (Graver, 1995, p.431-2).

According to the Consumer Ombudsman 'there has been an over-sell of environmental argumentation, with too much noise and too little content'. However, closer supervision of marketing could 'restore respect for the argument' and influence demand (Graver, 1995, p.430).'

The Norwegian Ministry of Children and Family Affairs (which financially supports the Consumer Ombudsman) has sought to merge the role of government as a 'protector' of consumer rights with that of a 'protector' of children and youth. In 2001, a ministerial inquiry examined how to 'strengthen knowledge and develop critical attitudes among minors towards marketing gimmicks'. It concluded that: 'children and adolescents are increasingly becoming target groups for aggressive forms of marketing practices and for commercial pressure with a view to stimulate and increase their consumption...we see too many examples of commercial interests that cynically exploit the uncertainty children and adolescents feel about their identity and self-esteem'. The inquiry recommended that 'children, youngsters and parents should be educated to develop skills to face the increasing flow of commercial information and pressure' whilst adding: 'in a modern society public authorities have limited possibilities to regulate commercial influence and reduce commercial pressure on children and youngsters. Parents, business, advertisers and organisations should therefore take responsibility for the children and adolescents as fragile groups in society' (MoCFA-Norway, 2001, p.1-2).

Government is already undertaking a role in the area of consumer education. Through funding from the Norwegian Ministry of Environment, the GRIP Centre for Sustainable Production and Consumption placed full page advertisements in newspapers explaining eco-labelling for clothes washing machines and what questions consumers can ask of retailers. The Centre's training courses and strategic planning assistance help equip 'shop-front' personnel and management to communicate the benefits of sustainability (MoE-Norway, 1997, p.35). The same Ministry also supports the NGO Environmental Home Guard and its Green Families program to build the competency of households (MoE-Norway, 1997, p.47). Yet some actors in the *Debio* product chain believe that government should do more because

'it will cost too much for any one single marketer to both educate the consumer on environmental issues and on their particular product' (Processor, 1998).

5.6.3 The role of business and industry

There are calls within business to adopt a more general role alongside government to ensure that sustainability is achieved: 'corporations can and should lead the way, helping to shape public policy and driving change in consumers' behaviour' (Hart, 1997, p.76). In practice, few global corporations implement such goals in a proactive way, although in the energy sector, BP's investment in renewable sources, and marketing and public support for the ratification of Kyoto Protocol is an example of such leadership (*Age*, 8 November 2001). The challenge is that learning new competencies requires time to change cultural thinking and practices, including the 'hidden' interpretative filters and norms which guide behaviour and responses. Within organisations, the institutional framework can be improved to help accelerate learning and culture change: 'The current environmental management metaphor in most firms is compliance – not sustainability or industrial ecology' (Ehrenfeld, 1995, p.52).

Several actions are recommended by the WBCSD, including adoption of 'environmentally-preferable' procurement programs and 'improving the equality of educational programs to support sustainable production practices'. The latter include curriculum development on sustainability to ensure 'appropriate training for all future business leaders' (Falkham, 1996a, p.29). The challenge for business is to also ensure all employees, suppliers and shareholders understand and share 'responsibility' for achieving sustainability.

As the case of ecological food in the Nordic countries has illustrated, industry branches such as producers' associations and marketing boards have considerable influence on whether environmentally improved products are promoted or stifled in the market. Representative bodies are often the least supportive of change, especially to institutional arrangements that empower other actors. While companies engage in stakeholder dialogue, industry associations that represent them are sometimes recalcitrant (Frankel, 1999).

The potential for business and industry to enter into partnerships with government and environmental and consumer NGOs is considerable. The successful marketing of Swedish and Danish organic food, which involved conventional farmers' unions, processors and retailers, is an example. In terms of learning, potential partners for consumer education include: formal educational authorities, consumer organisations, independent environmental

organisations, professional associations, research communities, agencies at all levels of government, and the media

Retailers especially are in a position to form partnerships and to act as 'ecological gatekeepers' who can help facilitate consumer education by provision of additional product information and feedback mechanisms. A good example is the internal training program undertaken by staff in the Cooperative retail chains in some Nordic countries, including in Norway, where a four hour course, *The Natural Way* (*Naturlig Vis*), is supported by the GRIP centre (MoE-Norway, 1997, p.40). However, the scale of the task is enormous, as the exchange of environmental information is often unsystematic or incidental along the product chain and 'rarely reaches the consumer'. In particular, most retailers are reluctant to screen products that require the provision of 'easy-to-use' information beyond environmental labelling (Heiskanen *et al.,* 1998, p.34).

It is suggested that the degree of regulation and the lack of competition has led to poor consumer ability to 'use the purchasing process as a way of sanctioning the suppliers...resulting in low market efficiency, lack of product differentiation and a neglect of consumer claims...In monopoly markets, like milk and dairy products, consumer choice of substitutes represents a threat to the monopolists' market power' (Jacobsen and Dulsrud, 1994, p.2). In such a situation, the educative role of the retailer becomes even more important.

Heidenmark suggests that the more regulated market in Norway and Sweden (compared to Denmark) has made it harder for retailers to influence the supply chain; 'a history of stable prices and a secure market for the agriculture output may explain this insensitivity to market signals' (2000, p.153). In a Finnish study, retailers shared a common view with consumers that they were 'rather powerless to influence the environmental aspects of products' (Heiskanen *et al.,* 1998, p.50). However, the same study concluded that retailers, along with many actors in the product chain, 'were no more knowledgable than the general public on environmental issues' (p.30).

5.6.4 Roles of Marketers.

There is considerable scope for the marketing profession to help consumers understand the comparative performance of innovative products. Market research could identify the current knowledge base and unarticulated needs of mainstream consumers regarding environmentally responsible products and services. One reason why the flow of information

concerning 'environmental demand' from consumers is weak, is that such demands 'are often very unclearly articulated' (Heiskanen *et al.,* 1998, p.34). Real or perceived lack of demand inhibits supply. Yet, as shown in the Norwegian organic food situation, communication between consumers and supply actors in the product chain is weak, with marketing often ineffective.

Although some marketers address sustainability issues, there remains an overall preoccupation with managing the price factor, which can dominate the communication of value and quality to consumers. The literature review undertaken for this thesis showed that the role of environmental knowledge in shaping consumer decision making processes has been generally dismissed in conventional marketing and advertising. A lack of interest among marketing practitioners in the potential it has to educate consumers for sustainability was also observed at the Norwegian School of Marketing. The dominance of conventional ideas about marketing constrains environmentally-informed thinking within the profession. While there are some new theories abroad, attitudes that created the 'green gloss' and hollow hype of 'environmental friendliness' in the late 1980s are still very prominent. In 1997, at a major conference for marketing professionals from North America and Europe (Association for Consumer Research, 25-29 June, Stockholm), less than 5 per cent of the papers presented addressed sustainability issues.

The low level of attention given to issues of sustainability in most marketing and advertising texts, reinforces the need for new professional learning tools. Little market research exists to assist the integration of life cycle and systems thinking into the design of long-term marketing strategies for mainstream consumers. Consumers are often not seen as stakeholders in their own right, with their frequently un-expressed, under-developed or longer-term needs discounted by conventional marketing strategies. Whether mainstream consumers require assistance to articulate their concerns and needs is largely forgotten by conventional marketing.

Marketing continues to be criticised by health, welfare and other sectors for 'absolving' itself of responsibility for the consequences of excessive consumption (for example, of food) in industrialised countries. Marketing and advertising reinforce consumer perceptions that convenience, 'casual disposal', 'status and image' and declining prices, are the hallmarks of product value. Faced with the challenge to reverse the message, there are signs of denial or fear among the profession. The defensive stand taken by the advertising industry in the mid 1990s in its international campaign - the 'right to choose' - ignores the opportunities presented by the consumer's 'right to know'.

For market research to meet the sustainability knowledge needs of consumers, new measures, standards and tools to evaluate the performance of marketing and eco-labelling are needed. Adoption of a common conceptual language for accurate, clear and consistent information could assist set quality standards. Adoption of this would allow marketing and advertising to take a proactive position rather than the often defensive or dismissive one concerning environmental and social issues. Individual businesses have 'a significant responsibility to understand the effects that their products and services have on the "quality of life" of those that use them' (WBCSD, 1998, p.2). What is basically required is 'extensive consciousness-raising among marketing experts' (Enger, 1998, p.3). The competency of marketing and advertising professionals is an important issue, one that the World Business Council for Sustainable Development believes can be addressed by business schools incorporating environmental and marketing issues in curricula (Falkham, 1996a, p.28). The WBCSD's Internet-based study course - the *Sustainable Business Challenge* - is one response to this need (Willums, 1998).

The lack of environmental knowledge on the part of marketing professionals has serious implications. Specific Design for the Environment and Life Cycle Assessment education and training are rarely given in companies, with the consequence that the relationship between the producer and the consumer, based on the critical marketing of a new product, is put at risk. There is no agreed set of knowledge outcomes for the entire process from design to market delivery (Karlsson, 1997, p.88). According to Karlsson, marketing staff must share some of the fault when environmentally responsible products do not sell. For example, the designers of innovative products and services are not fully to blame when expected market success proves illusory. There are many cases where false figures, such as 60 per cent of consumers being willing to pay a 20 per cent premium for green products, have been circulated by both internal and external market researchers (1997, p.98).

5.7 Conclusion

Sustainability requires a learning process to effect a transition in human behaviour. Adopting a long-term educative role for all information tools will encourage actors to take the learning process seriously. The challenge of building the abilities of mainstream consumers to make informed choices in increasingly complex circumstances, as demonstrated by food consumption, is a massive one. The scale of the transition in lifestyles and daily

consumption decisions has already placed pressure on the coping capacity of the information tools.

Given the current weak state of consumer knowledge, both supply and demand sides can benefit by reorientating marketing and eco-labelling towards a learning process for all actors and at all points along the product chain. This chapter has analysed how the competency of actors can be improved. A favourable set of framework conditions in which the tools can encourage informed choice and continuous learning is essential. These framework conditions involve structural arrangements and relationships with other policy tools, including regulative and economic ones, and socio-cultural factors.

The key is for government and business to support change to the roles, responsibilities and rights of various actors along the product chain in regard to consumer education. Government (at all levels), producers/industry associations, retailers and institutional buyers (the 'gatekeepers') and consumer, health and environmental NGOs, can all help remove barriers that hinder the flow of credible and useful information to the end consumer.

By taking a 'product information chain' approach, which seeks to add value to information by communicating a core of essential knowledge, the tools of marketing and eco-labelling can become more effective. The benefits of using a conceptual knowledge base to underpin instrumental knowledge will help consumers become more confident and capable of responding to opportunities to purchase environmentally responsible products and services, as well as to engage in dialogue with other stakeholders, consumers and citizens.

In the next chapter, the most critical lessons from the Norwegian data are discussed. Their implications for Australia and other industrialised countries are considered within the context of how feasible it really is to rely upon informed consumer choice to deliver sustainability. A set of recommendations for government and business is also provided.

CHAPTER 6
IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

In this chapter, the global relevance of the Nordic findings, especially to Australia, is examined. Norway's experiences indicate slower than expected progress in changing unsustainable consumption patterns. While the main mechanism for achieving sustainability in free market economies is 'informed choice', barriers constrain consumer decision-making.

The chapter includes recommendations for improving 'informed choice'. In the case of food demand, Nordic research has shown that solutions mostly involve the use of information tools to facilitate consumer learning.

6.2 Broad and potential implications of findings.

6.2.1 The current demand situation and trends.

At the macro level, trends in private consumption in industrialised countries are clearly not heading in the direction of sustainability, especially regarding energy and food. The scale and significance of the Norwegian experiences are relevant for other small-medium sized nations. Citizens of the natural resource-based economies of Norway and Australia are having an environmental impact per capita that is among the world's highest, according to the UNDP in 1998. While every product is different, the lessons from Norway's organic food, when placed in a broader context of influences on consumer behaviour, are clearly of relevance.

We have seen that market demand for dematerialised or eco-efficient goods and services is slow. Uncertain performance of the main information tools of eco-labelling and marketing suggests serious limitations to the key mechanism of 'informed choice'. Questions concerning the viability of market-driven solutions flow from this situation. Will the often-repeated commitment of government and business to sustainability really be fulfilled by consumers changing their behaviour in response to supplied information?

The Norwegian evidence suggests that the widespread expectation of policy makers that consumers will voluntarily change behaviour and purchase environmentally-improved products is not being realised. The percentage of consumers with positive environmental attitudes is only

steady at best and declining among youth and younger adult consumers. The 'attitude-action' gap, too, appears not to have closed to any measurable extent. It can be concluded, that if information tools are ineffective in translating existing concepts, such as eco-efficiency, into demand, then Factor 4-10 and eco-sufficiency will be even harder to achieve.

The Norwegian situation has serious implications. This country broadly endorsed the Brundtland Report and made a strong commitment to the Rio Earth Summit. However, today it shows patterns of contradiction, with private consumption continuing to grow and individual internalisation of responsibility towards global sustainability much weaker than in the early 1990s. With the circumstances of an economy and personal quality of life among best in world, doubt must be cast upon the conventional wisdom that growth is the prerequisite for environmental commitment. As sustainability policies are revisited at the World Summit on Sustainable Development in Johannesburg, South Africa, in 2002, this contradiction will have implications for developing countries. There has been a strong policy assumption that consumers in industrialised countries will help drive sustainability because positive attitudes will converge with market forces to create rational and informed choices for environmentally improved products. But the evidence suggests there has been little real progress, even in one of the world's wealthiest and apparently most 'informed' populations.

In Norway, as in other countries, many sectors of industry have reduced their consumption and adopted eco-efficiency, but the change process is not flowing on to private consumption. While there is evidence on the supply side that environmental standards have improved, no similar level of evidence exists in regard to improved standards for consumer literacy or for the effectiveness of information tools. Knowledge levels of environmental impacts of production processes and of the use and disposal of products is poor among actors along the entire product chain. The Norwegian ecological food case confirms that the policy focus remains on reducing the environmental impact from production changes, rather than on changing consumer demand.

One of the main policy messages from the Rio Earth Summit was for the internalisation of costs in prices. This has hardly happened and information tools are doing little to explain 'hidden costs' to mainstream consumers. Although Norway has tried to expand efforts in this direction, political opposition to ecological tax reform and subsidies for the transition to environmentally responsible production processes has allowed 'perverse' subsides of conventional production to continue. Transparency of the environmental burden or materials flow, which is essential for Factor 4-10 implementation, has not eventuated.

Demand is being constrained by poor availability of alternative products and by intractable institutional factors. However, several knowledge-related obstacles also limit environmentally conscious purchasing by actors. These include: a lack of conceptual knowledge, the perception of economic costs attaching to environmental consumerism, the complexity of decisions and information, and access to product information itself. Government and business are not sending strong and consistent signals to consumers about individual responsibility for sustainability. Instead, many Norwegians either believe that 'everything is being managed', or that their individual impact does not matter. Overall, marketing signals are negative towards the internalising of responsibility to change global consumption, particularly international marketing messages of 'you deserve' or 'I want' to young consumers. Globalised marketing focuses more on style than substance. Rather than encouraging a 'rational' decision, a more 'emotional' one appears increasingly the norm.

If marketing is trending towards 'shallowness', eco-labelling remains trapped within perceptions of being too bureaucratic, with labelling criteria either awkward or non-transparent to consumers. The thesis has shown that there is need to harmonise the various labelling schemes to ensure more consistency with the information that these tools deliver to consumers. Consumer preferences are still mostly based upon physical characteristics such as appearance rather that tangible knowledge of environmental and health costs and benefits. While price remains simplistic and does not fully 'tell the ecological truth', the need for more transparency with eco-labelling criteria is becoming critical.

On current performance, information tools are unlikely to accelerate informed choice in industrialised countries. Consumers are not using environmental information about products in their purchasing decisions. Instead of comparing conventional and environmentally improved products, consumers defer trust to authorities and decline to accept individual responsibility. Consumers are pressed for time and what information is available is often perceived as irrelevant, too complex or too confusing. Cynicism and distrust of 'green gloss' marketing further encourage consumers to defer responsibility. In the case of food, Norwegian consumers appear to want more information to satisfy their concerns about environmental and health issues. But information flow is dominated by Ministry of Agriculture-endorsed advertising of *Godt Norske* conventional products and the price marketing of the main retailers. Norwegian consumers receive little information about the internalisation of costs, labelling criteria or the wider sustainability agenda of food security for developing countries and the impacts of over-consumption.

One lesson for all countries is that more effective tools need to be developed rather than simply anticipating a wave of 'green consumers' to deliver a market solution to sustainable consumption. If government and business are serious about building supply side competency then the same needs to apply on the demand side. This is currently not the case in industrialised countries.

6.2.1 Food consumption

There are several lessons learned from the food consumption patterns in Norway and from the 'hard edge' example of environmentally-responsible food (organic or ecological food). Our food example also confirms the scope of the problems facing all industries. As has been shown, 'dematerialisation' is highly applicable to the agricultural sector and individuals' daily choices have a critical impact on many sustainability indicators. However, food remains marginalised in overall product development policies. Even when attention is paid to food it remains focussed on the supply side, with a strong faith in science and technology to resolve continuing environmental, economic and social damage caused by industrialised agriculture's unsustainable depletion of the natural capital base. In many cases, technology is part of the problem and continuing reliance on it has resulted in less attention to population pressures and over-consumption. The basic need for food remains unsatisfied for more than one billion people, while richer countries, and segments within developing countries, are still increasing their levels of consumption.

One of the main findings of this thesis is that consumers in industrialised countries are generally unaware that the main arguments used against changing food consumption patterns have substantial flaws. These include:

- 'Food security is caused by population increase'. But over-consumption is rising just as fast as population as evident in the intake of excessive animal protein (especially through beef) and the obesity 'epidemic' among children in industrialised countries and the wealthier segments of many developing countries, including China. Other causes of what can be described as the 'waste' of food include the accelerating (and often deliberate) disposal of food after preparation for eating, continuing over-production (as evident in subsidised 'gluts' in Europe and North America), and losses from the increased transportation of food, which affects quality, safety and 'shelf life'. Over-consumption is fuelled by energy from cheap fossil fuels that underpin the accelerating increase in the transportation of food. Large processing plants in central locations, international trade in both fresh and processed foods, and centralised shopping centres, all contribute to the hidden costs of food consumption.

The irony is that increasing food safety concerns (such as salmonella food poisoning) are related to increased refrigeration, transport and handling.

- 'Cheaper food production and higher yields are required for farmers to make a profit'. Farmers worldwide are receiving declining returns for produce, but this is due mainly to the costs of inputs such as seed, fertilisers and pesticides, while the processor and retailer are making greater margins, in some cases up to 1000 per cent. Labour costs are ignored and consumers are not informed. The degradation of productive land is caused by the 'cost-price squeeze' on farmers who cannot afford alternative environmental management without financial support, either through subsidies or improved market prices. Increased competition in international trade is resulting in long term decline in commodity prices, particularly for agricultural products from countries such as Australia and Norway. Instead of asking if consumers are paying too little for quality food, producers are encouraged by other supply chain actors to reduce costs and embrace labour-saving GMOs.

- 'Consumers need cheaper food as food is too expensive'. As a percentage of income, expenditure on basic food in all industrialised countries has fallen dramatically in the space of one generation. Consumers are paying more for convenience, exotic varieties, away-from-home meals and costs of preparing meals in smaller households. The priority placed on food is falling if the trend in income spent is an indicator. In 1997, the average American household spent under ten per cent of its budget on food, while expenditure on entertainment 'dramatically increased' and spending on gambling and drugs nearly equalled that for food. This prompted one observer to conclude that 'fast food is taking over popular culture...sports, entertainment, news, fast food and movies have become barely indistinguishable' (Cumming, 1999, p.18-19).

With environmental damage growing from rapid urbanisation and pollution of fresh water and productive soil, it is imperative that consumers understand the consequences of consuming food. Yet consumers receive more 'infotainment' than knowledge regarding food choices. Critical issues include global food security and alternative production pathways, such as conventional, Integrated Production, organic or biotechnology. The limited capacity of consumers to engage in these debates constitutes a crisis of competency. There is also a related issue, one dramatically highlighted by the BSE crisis – declining public faith in information from conventional experts and authorities, and growing suspicion by consumers of official reassurances.

Organic (ecological) food was initially selected for study because food containing GMOs were banned from the Norwegian market. Organic food, as it is argued here, is only an indicator for the direction in which food production and consumption should go. The position is similar to that adopted by industry actors in Denmark and Sweden, where national targets are used as 'signposts'. The study has also confirmed the relevance of organic food for sustainability. Organic agriculture has 'matured' in many countries, as evidenced by the dedicated national labelling schemes. Following decades of voluntary self-regulatory symbols, the new certified, third party schemes are now supported by government regulation. While the national schemes have reduced consumer confusion and uncertainty, the existence of other labels and the lack of known criteria have prolonged these factors.

Examining how Norwegian consumers make an informed choice for organic over alternative food products, has relevance to both industrialised and developing countries. Organic food is the fastest growing form of agriculture worldwide, as GMOs are still mainly confined to the two American continents. An editorial in the *New Scientist* suggests that research into 'low tech' farming methods for developing countries 'makes sobering reading for people convinced that only genetically modified crops can feed the planet's hungry in the 21st century' (3 February 2001). Organic farmers' lower yields 'can still be profitable once the savings of chemical additives such as fertilisers are taken into account' (*BBC News*, 14 September 1999).

Although organic food may help provide a part of the solution to global food security, even in an advanced market such as Denmark (where the target of 20 per cent market share for organic foods is close to reality), more effort is needed. Denmark accepts criticism from the OECD that its 'transport is moving in the wrong direction...(and) with agriculture, things are moving in the right direction but too slowly' (DEPA, 1999, p.2). Many challenges remain on the demand side, including convincing consumers to stabilise their animal protein intake and to use more seasonal and local foods. But consuming locally grown food is a complex issue as it can, in some circumstances, have a greater environmental impact than the energy used in the 'food miles' for imports. For example, the energy used for growing greenhouse tomatoes in Iceland can be greater than that used in importing tomatoes. The complexity underlines the importance of providing adequate product life cycle information to consumers to ensure 'informed choice' is realistic.

In summary, the main lesson from the *Debio* ecological food case in Norway is that consumers' desire to know more about the food chain is hampered by inadequate information. Limited cooperation from key industry actors, such as processors, reinforces fears of competition from imports while the criteria for the eco-label are not understood compared to the simpler 'country-

of-origin' *Godt Norske* label for conventional food. The implications of this sinuation are more serious if the choice trend by consumers in Norway to cheaper processed foods continues. The consequences of deteriorating health and nutritional diets appear lost on many consumers, especially youth and low-income groups. The global cultural phenomenon of fast food serving a simple 'entertainment' function is opposite to the notion of making decisions to consume on sustainability grounds. If consumers cannot place food consumption into real perspective, this may indicate a flaw in market-driven sustainability.

6.2.2 Food consumption lessons for Australia

The low profile of eco-labelling in Australia raises questions about opportunities for consumers in this country to make informed choices. In Australia there are seven accredited certifiers for organic food, including the two dominant labelling organisations, the Biological Farmers of Australia and the National Association of Sustainable Agriculture Australia (RIRDC, 2001, p.2). Although only one per cent of Australia's agricultural output, domestic demand for organic food is growing steadily despite the absence of 'umbrella' legislation for certification and labelling: 'locally, anyone can label food as organic and the only redress for consumers is an appeal under the truth-in-labelling laws of the Trade Practices Act' (Susskind, 2001). This raises the question of how retailers respond to consumers' expressed need for information. It is the author's observation that retailers are not in a strong position to help consumers evaluate alternative products beyond physical attributes. The need for consumers to understand environmental impacts, full pricing or how to make cost-benefit decisions to act in an environmentally conscious way, appears to be less than in Norway.

However, as in Norway, Australian food chain actors (including organic farmers themselves) seem preoccupied with supply side issues. A similar perception to that in Norway seems evident among Australian actors, including consumers - that conventional foods are 'good enough' and are adequately regulated to ensure safety and quality. Government and conventional agri-business actors see exports as the main driver for organic produce because domestic consumers will not pay high premiums. A similar 'vicious circle' exists where the weak link is the provision and use of information to allow comparison between conventional and environmentally-improved products. As a result conventional food continues to be supported by consumers and by government subsidies. The OECD has identified that Australian agricultural producers already receive the equivalent of a nine percent subsidy (1997c, p.9). Although this is much lower than the OECD average, it does mean that government could introduce support for ecological food production if it wished to do so, especially through the Nordic model of shifting 'penalty' tax revenues into 'incentive' subsidies.

The disinclination of the Australian agricultural 'policy community' to support the transition to organic food production is similar to that experienced initially in Norway and other Nordic countries. The slow development of organic food in Norway cannot be explained by its harsher physical climate as comparable Finland and Sweden have ten percent of farmland already converted. That Norway has only recently set such a target is due to institutional factors that indirectly stifle demand.

6.3 Scenarios and potential policy risks

6.3.1 Risks from weak demand

The 'reality check' of consumer demand in Norway and other countries suggests that many environmentally-improved products are encountering weak market support. The risk is that further product innovation and investment in cleaner production will be inhibited. The thesis has noted that consumers are poorly equipped to make informed choices, suggesting an inability to use and act on current information, which in turn indicates inadequacies in the main tools used to communicate knowledge to consumers, namely marketing and eco-labelling. Basic environmental knowledge levels in consumers are low and marketers do not know what the knowledge needs of consumers really are. The current situation is one of general 'information deficiency' on the demand side.

The main risks to sustainability that flow from this situation can be discussed under four main topics, as follows:

a) Food security and food safety

Poverty and inequality remain unresolved because industrialised consumers (and the wealthier segments within developing countries) continue to consume more food, especially the more 'materialised' meat products. The ecological carrying capacity of food-growing areas continues to decline globally while more food is exported to boost economic growth. Already there are signs of increasing social conflicts and the emergence of a new 'ecological and economic refugee'. The International Food Policy Research Institute has cautioned industrialised countries on the consequences of slow response: 'do not believe for a minute that you will not be affected. A world of extreme poverty on the part of many, and overt material excesses on the part of some, is an unstable world' (Pinstrup-Andersen, 1995, p.10).

There are also signs that the overall quality of food is deteriorating as pressure mounts to supply increased quantities to satisfy over-consumption in industrialised countries. Over-processed foods carry health risks and are creating a widening gap between those who can afford 'safer, clean and green' food (such as organic) and those on low income who cannot. Technology is increasingly used to produce cheaper food that exposes consumers to uncertain risks which are no longer under their 'locus of control'. It is becoming more important, contrary to what some food chain actors imply, that consumers have adequate information about food products and production processes.

The alternative to empowering consumers to make *fully* informed decisions is the deferral to authorities, such as food safety regulatory bodies. This has been a key message in the marketing of Norway's *Godt Norkse* labelled conventional food. However, trust in assurances of the quality of domestically grown food is now emerging as a risk in Norway. According to the EU, 'ordinary Norwegian food contains five times more toxins than is safe' (*Norway Daily*, 26 March 2001). Although this report focussed mainly on fish, concerns have been recently expressed about other products, such as vegetables and fruit (as they now have in Australia). The underlying risk in promoting 'country-of origin' labels as a substitute for comparable health and environmental information is that such food can be exposed to a sudden collapse of confidence. This has already occurred in many industrialised countries with the BSE crisis, resulting in far more disruption and costs than an orderly transition towards ecological agricultural reform.

b) The knowledge economy

In the new 'knowledge age' there is a tendency to assume the capacity of individuals to operate in an 'information society'. However, access to relevant and reliable information to guide the daily decision-making of consumers remains questionable. Lundvall argues that broad, interactive learning is required for an 'innovative' or knowledge-intensive economy to function. Assumptions that economic actors make decisions exclusively on the basis of price signals and rational calculations 'seriously' undermines cooperation for the 'collective creation of complex new knowledge' (1992, p.47).

Failure to address the issue of whether consumers and other actors are actually competent to make the decisions they have been vested with, risks failure of the emerging 'knowledge economy' itself. Currently the knowledge intensity of products and services is valued less than the material intensity of products (for example, the size and appearance of food) as the

consumer is not capable of understanding other attributes. It is a significant irony that little investment is occurring in the learning processes for all actors in the economy; especially for consumers whose needs are, in theory, the drivers for all business activity.

According to Meadows *et al.,* cultures in business and government stifle the learning capacity for change: 'world leaders have lost both the habit of learning and the freedom to learn' (1992, p.232). The challenge is to balance the urgency for change with the patience to learn. Additionally, there is often a deliberate lack of transparency, a withholding of information or a rejection of any responsibility to educate consumers. Risk-averse organisations may deny the existence of new knowledge (and even that they themselves are ignorant) as this avoids responsibility for adjusting to long-term trends and planning for possible scenarios.

The new 'commons' in the 'knowledge economy' is education, in which no actor wants to invest in case 'free riders' benefit from their investment. The ecological food case indicated such a fear among many marketers and retailers. It is a dilemma that may only be resolved by government investment directly or indirectly in consumer education. The risk is that if consumer education is expected to be undertaken solely by the market, then the development of a common knowledge base (language and core concepts) is unlikely. Furthermore, by denying that consumer behaviour is complex, minimal resources are applied to closing the 'attitude-action gap' concerning environmentally responsible purchasing. Simplistic solutions are attempted rather than tackling socio-cultural influences and how to facilitate clear consumer articulation of needs. Business and government appear too often to ignore the reality that 'the market has to deal with a complex consumer who has a set of in-built contradictions and who puts forward conflicting and often false signals and misdirections to the marketer' (McKinna, 1990).

The shallow 'green' marketing approach based on communication only to small niches suggests a lack of commitment to ensuring that mainstream consumers can also make 'informed choices'. If policies do not facilitate learning processes for consumers, most consumers will not understand, share or utilise information directed towards them. If consumer decision-making is weakly underpinned by conceptual and instrumental knowledge, then it cannot be logically concluded that consumers can make 'informed choices', even if they desire to do so.

Consistent, transparent and trusted information to guide purchasers remains limited, and this is due in part to the globalisation process. While information technologies help communication, it is regionally focussed knowledge institutions and strategies that are vital to 'lifelong learning', according to Larsen: 'given the social, and often tacit, nature of learning and innovation, it is

not surprising that vitality is often best generated when partners are in sufficient proximity to allow frequent interaction and the easy, informal exchange of information' (1999, p.5). Furthermore, 'the ability to internalise learning strategies that promote innovation, interaction and exchange across all sectors of society' is the most important element for a knowledge economy (p.3).

c) Citizenship and democracy

Individuals require an underpinning of knowledge to confidently engage in social activity. Simply assuming that sufficient knowledge exists, without monitoring and evaluating it, is contrary to 'informed choice'. Yet this is currently the situation for individuals in both their roles as consumers and citizens. The risks include:

- cynicism and apathy as individuals perceive they are not being taken into the confidence of other actors, especially by government and business;
- as information becomes too difficult to comprehend and apply, it results in greater frustration with 'information overload' and decreased motivation to learn;
- a perceived lack of control over choices results from not being equipped with knowledge and skills, which in turn negatively affects motivation, abilities and opportunities to act; and
- a tendency to become 'free riders' is reinforced, as responsibility is not internalised. This is particularly crucial for sustainability.

An international study has found that 'Norwegian teenagers, especially girls, are among the least politically engaged on the planet...although most will still vote' (*Aftenposten*, 5 September 2001). Evidence from the Norwegian situation suggest that policy makers should not rely upon formal education as much as they have to date: 'Youth may give the right answers on knowledge but on consumption trends they follow the adults' (ENGO, 1997). At the same time, if youth perceive that they are not encouraged to continue learning in their role as adult consumers, the risk is that they will ignore messages to act responsibly.

The globalisation of consumption is important here, too. Marketing now operates in a 'borderless world' where global brands use communication messages often based upon the cultural norms of the North American market. An example observed by the author used 'urban gang aggression' to sell a global soft drink in contrast to the 'outdoor individual humour' of Norway's traditional soft drink. The capacity of global marketing to devalue the more knowledge-based social and environmental information at a national level is an emerging issue. The Norwegian Minister for Cultural Affairs believes that globalisation requires government to

adopt a new and important role of protecting and promoting cultural diversity: 'Only appropriate cultural policies can guarantee the preservation of creative diversity against cultural standardisation' (Haugland, 2001). The WBCSD is also aware that business needs to have an 'understanding of the local cultures, concerns, needs, opportunities and markets where they do business' (WBCSD, 2000a).

d) Internalisation of prices

Globalisation is also a powerful dynamic in the pricing of food. International competition is leading to greater concentration of ownership in retailing and processing, further weakening the economic influence of producers and consumers. Most actors are reluctant to see prices internalise the environmental costs of energy, as this would have a massive impact on the real cost of trade.

Price is the main 'rational' indicator used by consumers to determine the quality of products, but price, too, is based upon cultural perceptions. For example, monetary and non-monetary costs of time spent in searching for information and preparing food may be far greater for American consumers than in other cultures (Usunier, 1996, p.318). Yet global marketing appears to make minimal allowances for these differences. Other evidence suggest that relying on economic rationality is risky as consumers are often poorly informed of conventional pricing, let alone that of innovative products.

Failure to internalise ecological and human health costs in product prices remains a key obstacle to sustainability. There is no consensus on how the free market economy can factor environmental and social costs into the price of food. While the Nordic countries' attempts at ecological tax reform receive a reasonable level of community support, in countries such as Australia and USA the issue is only belatedly being raised. The New South Wales Farmers Association, for example, has called for a consumption tax on fresh food to fund the costs of salinity repair and the prevention of land degradation in Australia (*ABC News Online*, 28 November 2001). While such a step is still oriented towards an 'end-of-pipe' solution, it risks failure because it conflicts with a growing cultural expectation of consumer 'entitlement' to cheaper food. Policy makers also appear reluctant to resolve the dilemma of balancing the 'polluter pays' with a new 'end-user pays' principle.

Control of food and basic resources, such as water, is increasingly remote from the food growing areas themselves, and this is so in both industrialised and developing countries: 'There is a steady transfer of effective decision making power out of the hands of the rural

population...(and) those in a position to make key economic decisions are often poorly informed about rural ecological circumstances' (Weiskel, 1991, p.19). And as Sale reminds us: 'People do not, other things being equal, pollute and damage those natural systems on which they depend for life and livelihood if they see directly what is happening' (1985, p.54). Yet many farmers operate at an extremely micro level and have a similarly low level of understanding.

If the 'cost-price squeeze' continues for producers, it will be even more difficult for organic products to compete, as it is clear that consumers, anywhere, will only accept a maximum higher price of 20 percent. To produce ecological food requires more expertise and labour than does conventional food. The Norwegian case has shown that where most retailers use price-based marketing and where signals from politicians reinforce the perception that food is too expensive, consumers adopt a narrow 'informed choice'.

6.3.2 Possible scenarios

The thesis has confirmed that there is considerable uncertainty regarding the demand side of sustainability: 'Manufacturers are not prepared to take the risk of changing their products, retailers are not confident enough to voice explicit requirements, and consumers are confused' (Heiskanen *et al.,* 1998, p.51). What are the likely outcomes if consumption and behavioural trends continue?

Scenario analysis involves exploring the implications of such 'what if' questions and helps identify alternative futures. It also helps develop plans to deliver preferred outcomes rather than allowing the current low level of 'informed choice' to continue unchecked. The WBCSD considers that scenarios are a key 'management learning tool' and their 1997 'Global Scenarios Project' suggests three possible futures, based on major threats to ecosystem viability, including those linked to food production and consumption (the loss of crop and grazing land, shortages of fresh water, overfishing and 'threats to human health from mismanagement of pesticides and hazardous substances, and water-borne pathogens' (1997, p.8). The three resulting scenarios are:

1) Unlimited growth, or what the WBCSD calls *First Raise Our Growth (FROG),* in which both developing and industrialised countries act like the proverbial frog in 'slow-to-boil' water. This is how it currently is in the *conventional world* (Gallopin *et al,* 1997). Business continues to see environmental responsibility in adversarial terms and ignores opportunities for an orderly transition to sustainability.

2) In the scenario of *Geo-Polity* governments are 'rejuvenated as focal points of civil society' due to community demands for institutional reform (WBCSD, 1997). The risk exists that the process will be derailed by *barbarisation* and 'undesirable social change' as problems overwhelm the coping capacity of markets and policies (Gallopin *et al.*, 1997).

3) The third and favoured alternative, *Great Transitions* is based upon the 'dynamic reciprocity' of fast learning and innovation (Gallopin *et al.*, 1997). All that a consumer needs to know about a global free market is transparent, including 'widespread availability of information about ingredients in products, sources of inputs...' (WBCSD, 1997, p.25) According to the WBCSD, all actors cooperate in such a *Jazz* scenario to 'learn effective ways of incorporating environmental and social values into market mechanisms'. The role of government is low-key because 'green' behaviours are seen to be in the self-interest of all actors including consumers.

This third, preferred scenario raises interesting questions about the timeline required to resolve critical factors such as ignorance, institutional inertia and narrow pricing systems. Also, how long will people tolerate 'free riders' before demands start to build up for disincentives and penalties to be applied to such behaviour? The 'free riding' consumer often denies ignorance or a need to change behaviour. This position can be reinforced by high profile statements of government and business that claim the sustainability challenge is being resolved satisfactorily. The risk is that consumer responsibility will decline still further, leaving private consumption patterns unchanged and a pattern of demand that overwhelms any gains on the supply side. This could lead to a 'worse case scenario' with the following characteristics.

- misinformed, apathetic, confused and cynical consumers and voters;
- breakdown of trust and major uncertainties over governance issues; and
- accelerated over-consumption as urban populations, especially those in industrialised countries, 'appropriate' more resources from other regions.

Some actors interviewed in Norway believe that 'only a crisis will open peoples' eyes' (Consumer Advocate, 1997). However, there is already a 'crisis of confidence' in some countries, with major disruptions to food trade due to unknown contamination of food supplies. Poverty-induced instability could force dramatic changes in consumption patterns, but there appears to be little understanding of the nature of potential ecological or social crises. This is partly because, 'both as citizens and consumers, people tend to delegate responsibility to other agents than themselves in the marketplace, although recognising the necessity of individual

compliance, but without really considering collective actions' (Grunert-Beckmann and Knudsen, 1996, p.15). More disturbing for policy makers is the suggestion that 'if we interpret voting behaviour as external attribution and buying behaviour as internal oriented attribution of responsibility...(people) seem to be rather reluctant to see themselves as relevant actors towards a change of consumption patterns' (p.14-15). Already government and business are cautious about making long-term commitments, fearing that voters and consumers will not understand or accept change.

Some marketers have acknowledged what has been termed 'the darker side of consumer behaviour', a view of consumers that does not see them 'as rational decision makers, calmly doing their best to obtain products and services that will maximise their health and well-being, that of their families and that of society' (Solomon, 1996, p.624). Instead, 'addictive and compulsive consumption' behaviour can occur, leading to such illegal activities as shoplifting, credit fraud and bankruptcy. If 'lifestyles are to be re-negotiated', as implied by sustainable consumption, then communication of concepts such as dematerialisation and ecological space are going to test the learning infrastructure of any country.

Already, Nordic experiences indicate that progress in building new consumer competencies to make the kind of voluntary informed choices required for sustainability, has been relatively weak. Despite the investment by government and business in developing new technologies and eco-efficient practices on the supply side, the individual consumer may not change behaviour. One scenario is that a new 'green wall' will shortly emerge in the form a 'resistant' consumer who will ignore innovations and will undermine the assumed growth in demand for environmentally improved goods and services. There are many implications here for the development of policy tools.

6.4 Opportunities to strengthen the demand side

6.4.1 A better framework for learning

For optimal 'informed choice', an improved set of conditions is required. As shown, consumer behaviour is influenced by many external factors, including political signals and socio-cultural norms that affect motivation, and by institutional arrangements that affect opportunities to act. However, consumer abilities have also been identified as critical and this factor needs to be at the forefront of developing the demand side. Harnessing the full potential of the infrastructure for learning that exists in industrialised countries is essential to counteract the tendency to over-

simplify information and to 'dumb-down' the consumer's ability to deal with complex decisions. Stronger social tools would make the use of regulatory, legal and economic policy instruments more effective. The current efforts of business and government to build competency on the supply side (such as integrated product development) need to be linked to similar development of consumer capabilities. However, rather than simply responding with more advertising or public information campaigns, it is new knowledge-based marketing strategies that are required.

Opportunities exist for a range of new partnerships to strengthen the information tools and consumer learning processes. These would also involve investing in the training of marketing and communications professionals in all sectors, including the media. The partnerships would integrate business, government and NGO initiatives within mainstream consumer education. Just as the precautionary principle has been applied on the supply side, so too should it be directed towards ensuring preferred outcomes on the demand side: 'we can't wait until we know absolutely before we begin to act, because inaction may have extremely serious consequences' (WBCSD, 1997, p.10). Consumers should also be informed of the long-term challenge facing policy makers. One model is that of the Danish Technology and Consumer Councils (*Teknologiraadet* and *Forbrugerraadet*), which jointly published a free, widely distributed booklet on 'Three scenarios for Future Shopping and the Environment' (TR and FR-Denmark, 1996).

6.4.2 A new generation of information tools

A new generation of information tools is required to ensure effective change in consumer behaviour in industrialised countries. Marketing and eco-labelling must be reoriented if the capacity of consumers to understand the benefits of innovative dematerialised products and services is to improve. The 'hard edge' case of organic food highlights the need to go beyond simplified information and the fixation on price in order to ensure that consumers can respond to continuous *'cleaner and greener'* product improvements.

Some of the specific areas of co-operation between supply-side environmental and marketing strategies would include developing learning tools and techniques to overcome a number of barriers in mainstream consumers. These include consumer bias against perceived 'poor performing' and expensive 'green goods' and reluctance to accept greater responsibility for the use (or waste) and final disposal of products. Consumer difficulty in evaluating environmentally improved products could be further overcome by providing instrumental knowledge in, for example, eco-labelling, that assists in searching and utilising new information.

Additional elements of a new generation of learning tools are:

- Marketing

To support capacity building to understand and use both conceptual and instrumental knowledge, more varied background information should be made available. This would provide clearer product information to cover all phases of the product cycle from production to disposal. It could take the form of details about comparative costs and benefits of products based on lifecycle information. An interim level between eco-labels and such background information is the device of product declaration profiles. This would help avoid 'information overload' by guiding consumers through a small number of levels with progressively more detailed knowledge, based on time available and competency. Such an approach is already widely used in curriculum learning materials and on websites. This would be more convenient and effective than the current 'write-in' or telephone services offered occasionally by manufacturers. As shown in the Nordic countries, self-directed learning at either pre-purchase, point-of-sale or post purchase stages, can be successfully marketed through partnership with trusted third-party providers, such as consumer NGOs.

In addition to moving away from its preoccupation with small niches, marketing needs to link the broader environmental and health benefits of products with an 'exposure' of the 'hidden' costs. The basic role of economic tools (for example, subsidies) needs some explaining if people are to make informed decisions, both as consumers and voters. One solution would be to be to provide tools to help consumers adopt new household budgeting procedures that parallel the establishment of 'green' accounting at the macro national level. In Norway, the SIFO project to develop a 'green' household budget is a useful model to help consumers understand the comparative cost of food products and enable them to compare the magnitude of environmental effects flowing from their choices (Strandbakken and Kasin, 1995, p.46). Furthermore, a time dimension over a number of years would increase the possibility of developing an 'analytical tool for the consumer's own daily life pattern' (p.34). This is just one of several ways in which new instrumental information could be linked to the building of consumer competency.

- Eco-labelling

The current situation with labelling suggests that consumers readily become confused if there is not a strong environmental knowledge base for decision making. Determining the environmental consequences of two milk products, one *Godt Norske* and the other *Debio*, is not easy as neither provides details of life cycle criteria used for the labelling. Under these circumstances, the role of information is replaced by other determinants of choice, namely:

- High price;
- Poor quality perception of physical attributes;
- Insufficient supply;
- Social influence;
- And to some extent, uncertainty as to whose information to trust (especially as consumers are effectively being asked to reject a 'trusted' brand in the 'country-of-origin' alternative if they select ecological food).

SIFO surveys confirm that appearance, taste and freshness 'have to be fulfilled before many consumers will emphasise other aspects such as health and nutrition, ecologically sound production or animal welfare' (Wandel and Bugge, 1994, p.1). The *Debio* versus *Godt Norske* situation reflects the findings of Thogersen and Andersen who suggest that when people face a choice that appears too easy, as in the case of two food products appearing the 'same', then unconscious, automatic and habitual decision-making occurs (1996, p.189). Other studies show that while most people avoid complex decisions because they 'don't want to complicate their lives' they are prepared to act on 'simple, concise and compelling explanations' (Charter, 1992, p.249).

There is a need to more clearly communicate environmental attributes via improved criteria and a simplified life-cycle analysis. But such labels should not repeat the oversimplified or 'bureaucratic' jargon that confuses consumers and lends weight to arguments that reject eco-labels as unnecessary trade barriers. The three types of eco-labelling all have a place in the market, although consumer trust is highest in the third party, independently verified schemes that are supported to some extent by government (Orre, 1997, p.84). Schemes that rate products on a limited number of environmental indicators (such as the energy 'star ratings' labels) are not as informative as a product profile (or declaration) based on multiple criteria. Self-commitment labels (such as those used by retailers in Sweden) can be helpful if products also carry the national eco-labels. This can build demand by encouraging retailers to explain the purpose of both labels and the benefits of making informed choices. This approach can help overcome one of the main barriers - that marketing of eco-labels is poorly funded compared to both conventional products and 'quasi-official' symbols such as 'country-of-origin'. 'Eco-

profile' labels that show quantified standards of processes and products have the most potential but only if the competency obstacle can be overcome: 'the ability of consumers to interpret such labels and decide for themselves which environmental issues are the most important should not be overestimated' (Orre, 1996, p.84).

In Australia, the reluctance to introduce a national eco-labelling scheme reflects preoccupation with supply side policies. Delays are related to issues of 'equivalence' and harmonisation of LCA methods to address nutrient and water management challenges (RIRDC, 2001, p.33). While Australian producers consider demand to be unsatisfactory, there is little effort to overcome price barriers and consumer ignorance through information that would help consumers compare the environmental impact of alternative food products. That eco-labelling has been rejected in Australia since 1993 has placed responsibility back onto consumers to undertake their own, un-aided search and interpretation of complex product information. Without standards to protect consumers from misleading claims and symbols, access to and use of concise and reliable sources of information is greatly hindered.

6.4.3 Education roles, rights and responsibilities

Findings have shown that several key assumptions underpinning sustainability policies are questionable. There is little evdience in Norway that formal education is delivering a new generation of consumers prepared to support eco-efficient products and services and to modify private consumption patterns. On the contrary, some trends are in the opposite direction. There is also little evidence of the effectiveness of years of 'green' marketing, public information campaigns and eco-labelling. But as with the curricula in formal education, only a small fraction of the total marketing effort is directed towards informing consumers of environmental or social cost and benefit.

While consumers need knowledge to make informed decisions, information in itself is not enough and it is often either too complex or too simple. Industry and business, however, fear competitive and legal disadvantages from providing detailed information to help consumers compare the health and environmental consequences of products. According to the Nordic Council of Minsters, the absence of knowledge in society is as important as the lack of economic incentives, appropriate technology or institutional reform. Although knowledge about the environmental impact of the food chain often already exists, it is not 'spread or accepted among society's important decision-makers, such as politicians, industrialists and consumers'. Also lacking is knowledge about how to effectively communicate such knowledge to encourage

individual motivation to change: 'it can be expected that bringing about a lasting change in behaviour will be one of the most difficult obstacles to overcome' (Nordic CoM, 1998, p.44).

The current lack of value-adding to the product information flow would appear to be at odds with business and government support for the development of knowledge-based economies. 'Informed choice' by consumers is a strategic issue that affects corporate credibility, accountability, environmental reporting, standards, and brand loyalty, dialogue between stakeholders and many other management and policy commitments. Building a better knowledge base should also help achieve more cost-effective marketing and advertising, and provide a continuing stimulus to lift the standards, credibility and quality of marketing, eco-labelling and information tools generally.

Marketing inside organisations also needs improvement. Internal 'green walls' between researchers, environmental officers and marketers parallels the lack of partnerships between key external actors and stakeholders. To overcome the lack of investment in both internal and external competency building, the currently small budget allocations should be highlighted, debated and publicly disclosed in public and shareholder reports. This would help expose the need for professional learning tools to assist the integration of life cycle and systems thinking into the design of long-term marketing strategies (with the outcome of similar thinking and practices in mainstream consumers). It is important to have managers and other staff trained and to ensure there is two-way flow between marketing and production (Halme, 1994, p.20).

6.5 Policy recommendations for government and business

There appears to be a lack of performance measures to evaluate the effectiveness of the standards and codes of practices for the marketing and labelling of envionmentally-improved products and services. Establishing guidelines that define a common language would provide a basis for at least one indicator of quality in regard to contributing to 'informed choice'. Developing value-adding processes for the information tools could be based upon an agreed set of 'core' competencies of key conceptual and instrumental knowledge. This could also be used as a performance indicator by researchers (including marketers) and consumer advisory services (such as those operated by government authorities, industry branches and manufacturers themselves). Monitoring methods and guidelines for realistic standards, targets and expectations would need to be developed. Partnerships between various actors could be extended to involve research agendas and projects concerning consumer learning for sustainable consumption.

The Norwegian Kabelvaag workshop on sustainable consumption in 1998 concluded: 'ultimately, changes in consumption behaviour are only likely if those concerned have:

- An understanding of the impacts of consumption;
- Knowledge about the existing and potential alternatives;
- The motivation and incentives to change; and
- The capacity to change in terms of resources and infrastructure' (MoE-Norway, 1998, p.31).

The 'intermediary consumers', such as public authorities, institutional buyers and retailers, can provide key points of leverage in the market (MoE-Norway, 1998, p.30). Through procurement policies they can help build the 'critical mass' for overall market demand. Apart from generating reliable supplies and lowering the unit price per product, these actions also provide good opportunities for the education of other actors in the supply chain. It is a point appreciated by the WBCSD, OECD, UNEP and other international bodies. The involvement of advisory services in government agencies (at all levels), industry branches and professional bodies, along with shareholders' groups, can contribute to this process.

Consumer NGOs play an important role, especially with marketing, providing feedback loops, and 'green' household budgeting that helps overcome the perceived economic costs of purchasing environmentally-responsible products and services. Retailers, as 'gatekeepers of information', are potentially still more critical as they are 'in the best position to challenge habitual purchasing by means of special deals, promotions and other in-shop activities' (Thogersen and Andersen, 1996, p.193). It is also crucial that they accept their responsibility in the process of moving the market towards sustainability (Heiskanen *et al.*, 1998, p.45).

The WBCSD believes that dialogue among stakeholders about rights, roles and responsibilities must improve: 'the tension between personal freedom and societal expectations has the potential to be divisive. The more business can help ensure that consumption issues are not framed as an "either/or" choice, the better the chance of beneficial outcomes' (WBCSD, 1998). The role of business is to ensure that changes on the supply side are supported by stronger market pull from consumers. In order to do so, the WBCSD believes business should act by:

- improving the quality and value of the information they provide about their products and services, and so make it easier for customers to use the information;

- providing clear, consistent and accurate environmental messages despite the scientific complexity and uncertainly that may surround them; and
- enlisting the assistance of marketing staff to gauge the market's environmental requirements (Falkham, 1996a, p.25-26).

The OECD believes that the motivation and opportunity to change consumption behaviour 'depends on the extent that citizens are educated and informed' and that 'a first step might be to focus on the training of professionals that have large and lasting influences on infrastructure development, institutions and lifestyles' (1998, p.54). The role of government in developing responsibility for change on the part of individual citizens is 'especially critical'. This includes 'raising public awareness of the need and opportunities, as part of a consensus-building process; in setting policy frameworks; and in leading by example in its own consumption of goods and services' (Long, 1994, p.159).

In Sweden, the government considers that 'it is important to define cognitive targets and to indicate methods for achieving greater universal understanding of the connections between our lifestyles and current development tendencies' (MoE-Sweden, 1997, p.10). Without education and research it will be difficult to understand the 'necessary restrictions on our present patterns of consumption and production'. Such education is a 'gigantic popular education project which needs to mobilise adult education, employment training, further education and competence development in the private and public sectors' (p.11).

While information is the 'key to transformation' towards sustainability, attention to more information and data is not as important as creating new channels, content and recipients (Meadows *et al.,* 1992, p.222). New systems of structuring information flow, such as policy 'glasnost', helped the rapid transformation of Eastern Europe. Finding ways to introduce new information in the current social system of high and often excessive consumption is extremely difficult, as is moderating material use and practicing energy efficiency within a social system that 'expects, exhorts, values and rewards consumption' (p.222).

The task of establishing a seamless learning process is large and needs to be placed within the context of the established educational infrastructure. For example, to help accelerate consumer learning, the many relevant professional bodies covering health and environment could be involved. There is considerable potential to develop guidelines for supporting innovative, knowledge-oriented marketing and eco-labelling that can strengthen learning processes along the entire product chain. These would also serve as new management tools for practitioners to

use and assist integrated management within organisations, especially between environmental and marketing functions. They could also constitute input into professional business courses.

Such guidelines could be based on the following objectives:

- Environmental information should be extended to all actors in the product chain (including retail buyers, salespeople and consumers);
- The environmental competence of gatekeepers (eg. purchasers) should be improved;
- Environmental supply chain management should be integrated into the environmental management of companies;
- Manufactures and trade should consider focusing more on demand management (eg. marketing, pricing, environmental education) to ensure that their environmental efforts are appreciated by their customers; and
- The trustworthiness of environmental labels among consumers should be improved. More information is needed on the bases of the criteria for different product groups and how the verification process works (Heiskanen *et al.*, 1998, p.55-57)

Schmidheiny and Zorraquin make a case for extending 'informed choice' to investors by enhancing 'the awareness of those many small individual owners of stakes in funds who are ill informed or even unwitting participants in the markets. Included here are all those who own shares and financial products such as life insurance and, of course, pensions' (1996, p.97).

A discussion of opportunities for improving the role of information tools needs to be balanced with consideration of their limitations in changing individual behaviour. Firstly, it must be acknowledged that information is not a panacea. The Norwegian situation has identififed the inherent risk in simply relying on information campaigns: 'Information is always seen as the solution to problems because it is the cheapest, simplest thing with least commitment needed by politicians or anyone' (ENGO, 1997). In certain cases, information campaigns aimed at changing specific consumer behaviour could be 'pseudo-solutions which, in effect, lead to the negligence of the underlying, more basic problems' including the lack of political will (Olander, nd, p.6). But there is often a gap between 'rational' motivation and conditions conducive to it, including the presence of value-based knowledge. According to Norwegian educator Foros: 'there should be a culture to be motivated by and some models to copy. If there is a lack of (these) we cannot expect responsible action' (1992, p.84). Danish researchers have promoted the concept of 'action competence' to ensure people can resolve the environmental and health problems they are working with. Such competence 'includes the capacity to be able to act - now

and in the future - and to be answerable for one's actions' (Bruun-Jensen and Schnack, 1994, p.13).

While Rensvik believes that 'a clearer and deeper understanding of the public perception of environmental information is needed' (1996, p.7), others have identified the need to clarify how a lack of knowledge affects motivation and the willingness to act on opportunities. Wilhite, for example, advocates more research into *how* demand is created and maintained, including into 'the social and technical construction of needs and the steady evolution of expectations about what constitutes a "normal" way of life' (2000, p.117).

Given that a learning infrastructure already exists in industrialised countries, it should be feasible to expect informed choice to drive change. However, the challenge is to ensure that a learning culture exists all along a product chain. As the Norwegian case has shown, any chain is only as strong as its weakest link. Fear of change has made some actors (especially processors and industry associations) resist calls from other actors (consumer NGOs and retailers) to facilitate more effective consumer education. However, other external factors limit consumer learning. A Nordic study found that the 'clear interest among consumers for environmentally improved products...remains un-focussed unless specific issues emerge for the public' (Heiskanen *et al.*, 1995, p.14). This itself is problematic, as over-simplification of these issues and any public conflict over how to resolve them may further confuse and inhibit consumers (1995, p.15).

'Informed choice' is feasible if policy makers change institutional arrangements and commit to an improved set of conditions that will support an effective educative role by the information tools. It is risky to assume that consumers are capable and willing to make informed decisions simply because of their self-reported awareness and interest in environmental goods and services. In the *Debio* case, institutional relationships hindered the supply of alternative products which, in turn, led to low sales, reinforced the reluctance of discount retailers to stock supplies and created further obstacles for consumers to overcome. According to Wilhite, consumers have, in reality, a 'limited matrix of choice' and 'individuals can influence what happens at the end of the pipe, but significant changes in everyday use are bounded by the "upstream" systems they are plugged into' (2000, p.114). However, it can be argued that empowering consumers with conceptual and instrumental knowledge can improve their capacity to influence the market and help 'illuminate' the context they are in.

The relatively low attention by some actors to improving the demand side may imply that it is best to simply change production and the products available. However, the supply side

approach must deal with free market realities, including 'free riding' competitors, opposition to product standards in trade and a reluctance to accept regulatory instruments. Some actors also suggest that 'informed choice' unfairly shifts the burden of responsibility onto individual consumers. Both arguments can be substantially overcome by investment in consumer competency and improving the performance of the information tools to engage the end-users of information in a two-way learning process. Such a commitment would help re-orient messages away from the current promotion of 'transient' wants and instead develop the longer-term capacity of mainstream consumers to understand, articulate and satisfy their needs. The reluctance to invest in consumer education is another form of 'business-as-usual' by policy makers. Naess believes cost constraints should be placed into perspective: 'ecological sustainability is still obtainable through an investment of only a fraction of the investment in advertising. But every year the cost of – or, more accurately, the necessary *investment* in – future life conditions, increases exponentially (1997, p.63).

Questions concerning feasibility can only be fully answered by ensuring a more balanced research agenda between supply and demand sides of sustainability. The thesis has established that there is limited data on policies, processes and practices concerning these issues. There is a shortage of secondary data on the constraining factors and their relationships to the development of marketing and advertising for sustainability. This extends to a general lack of baseline data and case studies of best practices for meeting the marketing challenges through an educative process. In particular, there is a lack of data on the causes of low consumer support for increased prices for innovative, longer-life products and services (especially those internalising more ecological costs of production). Little research in this field specifically addresses the need to link daily consumer decision-making on food purchases to natural resources management and food security issues.

6.6 Conclusion

This chapter set out a number of scenarios and has provided several recommendations for policy makers to consider in order to better prepare for the transition to sustainable consumption patterns. They all suggest that the need to address the competency base of mainstream consumers to make informed choices is essential. Investing in learning is a cost-effective and strategic way to strengthen market-driven approaches. Without such investments, 'informed choice' is likely to remain uncertain.

These conclusions are based upon evidence collected and analysed in a country that has been at the forefront of sustainability policies internationally. The micro level case of ecological food

consumption represents one of the most challenging decision fields for consumers in any industrialised country. Norway has highlighted a pattern of contradictions, inconsistencies and paradoxes that exist at the global level, including:

- Economic wealth is not leading to more internalisation of responsibility for sustainability;
- Although marketing is supposed to listen to and then satisfy consumer needs, it appears incapable of doing so when it comes to environmental and health related information;
- Despite faith in informed choice to drive change, business and government are poor investors in consumer education and the demand side generally; and
- Despite the influence of price as a determinant of product value, consumers are not informed of the real costs in prices.

The situation regarding sustainable consumption in Norway may reflect what the German commentator, Hans Magnus Enzensberger, saw as 'Norwegian anachronism': 'What has amazed me about this small, remote society is how they have consistently managed to lag behind and simultaneously be ahead of the times' (MoFA-Norway, 1992, p.46). While Norway recognised very early the imperative to change unsustainable consumption patterns and took international leadership on the issue, it has been slower than some of its neighbours to effectively change. The organic food case also provides a clear insight into the potential flaws in policies for sustainability that are based on assumptions about human behaviour and, in practice, underestimate socio-cultural influences.

CHAPTER SEVEN: CONCLUSION

This thesis has identified the risks and opportunities inherent in the market approach to achieving sustainability through consumer demand and, in particular, through 'informed choice'. In establishing the relevance of 'informed choice', it was noted that the trends in global production and consumption are towards increased private consumption in industrialised countries, especially for food. This raises concerns about the effectiveness of the current information tools in encouraging consumer behaviour in favour of more environmentally responsible products and services. It was argued that Norway (an internationally leader in sustainability policies) and organic food (a 'clean, green' product) offer 'hard edge' verification of consumer trends and of the role of marketing and eco-labelling in 'informed choice'.

The dynamics investigated at the micro level have clarified the relationships between economic, social and ecological factors inhibiting consumer choice. Contrary to policy expectations, further market introductions of environmentally improved products are at risk from the widening gap between consumer attitudes and actions. Slow demand results from restricted opportunities to purchase alternative products, low consumer motivation and limited abilities to understand environmental information about products. The thesis has described how both internal and external factors undermine attempts by consumers to make an 'informed choice'. Poor quality and limited availability of product information are factors, but it is the absence of a conceptual and instrumental knowledge base about sustainability that most inhibits consumer competency and confidence to compare products.

The thesis has shown that several assumptions that underpin market-driven mechanisms need to be reconsidered. These can be summarised as follows:

- Information alone is not sufficient to change behaviour, especially when consumers have a weak conceptual and instrumental knowledge base upon which to interpret environmental product information (including eco-labelling);
- Consumers are relatively weak actors in the supply chain as there are no systematic feedback processes for mainstream consumers to articulate their environmental and health needs and influence the supply chain;
- Young consumers are reluctant to act upon their increased awareness of environmental issues or to accept moral 'appeals', while pervasive globalised marketing and institutional signals endorse conventional products; and

- Economic growth and higher 'standards of living' are not creating consumers who are prepared to internalise responsibility for consumption, environmental protection or poverty elimination.

There are several paradoxes from the investigation of Norwegian food consumption that have implications for 'informed choice' and all sustainability policy tools, internationally. These include:

- While consumers are given more responsibility to make well-informed decisions, their capabilities to do so remain undeveloped, resulting in low empowerment and confidence;
- Although business and government expect demand to drive sustainability, there is minimal investment in mainstream consumer education to build the 'critical mass' needed for market success;
- While knowledge is expected to drive the 'new economy', consumers are given little concrete knowledge about the complex challenges and policy solutions involved in sustainable consumption; and
- Despite the expectation that choice is 'rational', most often the only information provided is the price (which lacks the 'truth' of ecological or social costs) and messages about physical attributes and 'country-of-origin'.

The key tools of marketing and eco-labelling are not systematically equipping consumers with the knowledge and skills required for informed decision making. As a result, mainstream consumers remain ignorant, confused or sceptical about environmental product information presented by these tools. They remain unaware that institutional and infrastructure barriers prevent alternative products being available, that conventional products do not include 'hidden' costs in prices or that 'perverse' subsidies reward unsustainable production processes. The lack of information on which products can be compared acts as a disincentive for consumers to internalise responsibility, while high premiums for environmentally responsible products conflict with signals from government and business about the 'right' to cheaper food and increased consumption.

The findings have particularly critical implications for global food security. The perception of consumers in industrialised countries is that food generally is 'too expensive' despite the reality of the declining percentage of income spent on basic food and the 'perverse' rise in health repair costs as a consequence of over-consumption. The perception of global food shortages does not fit well either with the increasing waste of edible food by wealthier populations within both industrialised and developing countries. Although the thesis avoids any 'alarmist' predictions, it would appear that all these trends in consumer behaviour are

unsustainable in the immediate future. Consumers appear to be uninformed about the declining capacity of ecological systems to produce more food or that this will also cause a decline in the quality of food. While the former will accelerate the disparities between populations regarding extreme poverty, the latter will also see low-income consumers receiving more 'high risk' food and having, in effect, no real choice.

Contrary to what is needed, globalised marketing has adopted a 'lowest common denominator' view of consumer knowledge levels, by either oversimplifying or ignoring environmental information all together. There is also considerable uncertainty over whether eco-labelling can provide more product profile information, due to a 'standardising' of markets. Yet the thesis has showed that the existing tools are already struggling in 'advanced' markets to communicate the benefits of eco-efficient and 'cleaner, greener' products and services. Neither information tool is currently well equipped to inform consumers of life cycle impacts or the internalisation of costs in prices. Of further concern to the implementation of sustainability through the market, is that the more complex value-based concepts of sustainability, such as equality, remain difficult for consumers to understand and use. New concepts such as environmental space and eco-sufficiency are currently absent from consumer information. Given the increasing remoteness of consumers from food production experiences (and consequences), the learning challenge is daunting.

It appears that government and business have not fully recognised the need to extend to consumers their investment in knowledge on the supply side. As the case of eco-labelled organic food in Norway shows, consumers are less empowered than expected due to complex socio-cultural factors constraining their choices. Similarly, the performance of the information tools is limited by a 'vicious circle' of ignorance, denial and fear of change by many actors. There is a need for knowledge-based information tools to act as a 'circuit breaker' and support the development of competency along the whole product chain.

Despite some good initiatives by Norwegian actors, the experiences of Denmark, Sweden and Finland show that considerable and continuous effort is required for change to occur on the demand side. Even in these countries, many actors believe that government and business remain too pre-occupied with the supply side and that insufficient research into the underlying causes of consumption patterns is undertaken. Rather than simply supplying more information, marketing and eco-labelling need to develop knowledge-based strategies to assist 'seamless learning' along product chains. A core of *both* conceptual and instrumental knowledge would equip all actors with essential capabilities and help product information become consistent, clear and understood. It would also provide a foundation for a common language to help consumers articulate demands, business to engage in dialogue with

stakeholders and governments to more confidently implement required sustainability policies. Such a core of knowledge would also provide an indicator of competency among key professionals (such as marketers) and of quality standards for a new generation of marketing and eco-labelling.

The thesis has shown that a capabilities-based approach will help market forces to foster 'informed choice' rather than hinder it. Equally important is the need to address not only individual consumer ability and behavioural change but also the external context in which decisions are made – the socio-cultural norms, institutional structures and relationships between actors in product chains. This will involve actors changing their perceptions of each other's roles, rights and responsibilities in regard to learning for sustainability. In addition, signals from government and business need to become consistent and credible in order to close the gap between rhetoric and commitment to 'informed choice'. The full potential of all tools will not be realised until they are fully synchronised. For example, taxes and subsidies need to reinforce information tools' communication of the internalisation of costs in prices. A partnership approach to consumer education on eco-labelling criteria and extended product information (such as product profiles) would be more effective than individual actors undertaking the task or, as is the case in Australia, leaving a vacuum. Government, retailers and consumer NGOs are particularly important actors in such partnerships and can provide opportunities for learning at key leverage points along the product chain.

Considerable effort is required if mainstream consumers are to become knowledgeable about the ecological, social and economic costs of products and services. The paradox is that while there is great expectation of voluntarily change in consumer behaviour through 'informed choice', there is minimal investment in the processes, tools and conditions that will deliver such an outcome. The thesis has identified the need to undertake more research into the questions that flow from its findings. All policy makers should be aware of the need to reverse the trend in private consumption before it overwhelms the gains made on the supply side. As the international community reviews progress to sustainablity, it is time to assess the consequences of failing with such a pivotal market-driven solution as 'informed choice'. The lessons learned from Norway are important for all countries. The 'reality check' of just one nation and one product group suggests that the challenge of implementing this policy strategy is being substantially underestimated. If 'informed choice' by the end consumer is to become reality then it must occur along the whole chain. The lesson for all actors is to see the risks and to act on the opportunities that exist today to improve the tools for a transition to a sustainable future.

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Retailer, 1997 and 2001. Personal communication with employee of Norwegian Cooperative (NKL: *Norges Kooperative Landsforening*, the parent company of the Consumer Cooperative (*Forbukersamvirket*) chains, October (1997) and February (2001).

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Large Producer, 1998. Personal communication with member of Farmers' Union (NBL: *Norges Bondelag)*, Oslo, July.

Processor, 1998. Personal communication with employee of TINE ((*Norske Meierier*), Oslo, August.

APPENDIX

CORE INTERVIEW QUESTIONS re: MARKET DEMAND FOR ECOLOGICAL FOOD

The following set of questions was asked of all interviewees (actors in the *Debio* eco-labelled product chain) in Norway. Some additional questions, specifically relevant to each particular organisation, were asked. The core set was also used in enquiries with other research and government bodies in Norway, and with meetings with eco-labelling organisations in all the other four Nordic countries.

The core questions relate to the communication, information and knowledge processes involved in the development of demand side for food, especially ecological food.

The set is:

1) What is the current market situation and its effect on strategies to develop a wider range of environmentally-improved food products in Norway? What are the trends?

2) What are the main drivers and inhibitors of consumer demand?

3) What are the main drivers and inhibitors of changing supply-side policies to meet the expectations of consumers and authorities?

4) Are any barriers related to the existing levels of knowledge and the quality and type of information being provided along the production-consumption chain?

5) How are information needs being monitored and met? Are current knowledge levels sufficient for consumers to analyse for themselves the new performance qualities and benefits of environmentally sound or genetically engineered food products?

6) Who is responsible to educate the consumer and citizen? Could the tools of marketing and labelling be improved to meet the long-term knowledge needs?

7) What supporting conditions would assist the demand side and marketing policies concerning ecological food? (including roles of various players, partnerships, subsidies, taxes, guidelines, standards etc.)

Supplementary questions would clarify the perceptions of interviewees and/or seek supporting documented evidence, where existing.

The average length of an interview was 50 minutes. In some cases, repeat interviews occurred.